



**OKONITE (RUBBER) and VARNISHED CAMBRIC
INSULATED WIRES and CABLES**

OKONITE TAPE

MANSON TAPE

THE OKONITE COMPANY

THE OKONITE-CALLENDER CABLE COMPANY, Inc.

Factories: Passaic, N. J. - Paterson, N. J.

Sales Offices: New York - Chicago - Pittsburgh - St. Louis
Atlanta - Birmingham - San Francisco - Los Angeles - Seattle



SUPERHEATERS

DESIGNING ENGINEERS AND MANUFACTURERS
OF ELESKO STEAM SUPERHEATERS FOR
LOCOMOTIVE, MARINE AND STATIONARY
BOILERS



FEED WATER HEATERS, EXHAUST
STEAM INJECTORS AND PYROMETERS
FOR LOCOMOTIVES

17 East 42nd Street
NEW YORK

THE SUPERHEATER COMPANY

Peoples Gas Building
CHICAGO

OFFICIAL PROCEEDINGS RAILWAY CLUB OF PITTSBURGH

\$1.00 Per Year

25¢ Per Copy

Vol. XXIX

NOVEMBER 26, 1929.

No. 1.

8195

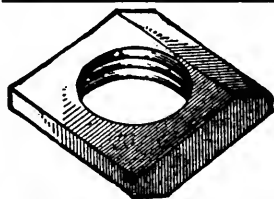
WHAT IS A GREAT JOB?

By JOHN G. BOWMAN,

Chancellor, University of Pittsburgh, Pittsburgh, Pa.

Steel Car Forge Company
PITTSBURGH, PENNSYLVANIA

FORGINGS



Dieter Lock and Holding Nuts

**STANDARD SAFETY NUT
CORPORATION**

30 CHURCH ST.

NEW YORK

LOX-ON DEVICES CORPORATION

PAUL W. DIETER, President

30 CHURCH STREET

NEW YORK CITY

LEWIS IRON, "The Iron Superior"

Penn Iron & Steel Company, Creighton, Pa.

SOLE SALES AGENTS,

Joseph T. Ryerson & Son, Inc., Chicago, Ill.

HAGAN FURNACES



*have Proven very successful
in every phase of Railroad usage.*

George J. Hagan Company

Chamber of Commerce Building.
Pittsburgh Penna.

Starrett



The Standard
For Accuracy



Cut Quicker
Last Longer



Accurate
Reliable

THE L. S. STARRETT CO., ATHOL, MASS., U. S. A.

27

SINCE 1900

For almost thirty years, Johnson Bronze has successfully served the railroads of this section with high quality products and prompt deliveries.

Whether the order calls for car brasses, engine brasses, general steam castings, miscellaneous bronze bushings or cored and solid bar bronze, you can be sure it will be handled with dispatch and that the product delivered will be up to specification in every detail.

Write for Catalog

JOHNSON  BRONZE
BUSHINGS BEARINGS BAR BRONZE

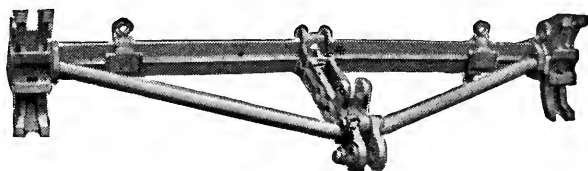
New Castle, Pa.

BRAKE BEAMS

"Solid Truss"
and
Built-Up Types

AND

Brake Beam Supports



DAVIS "SOLID TRUSS" PASSENGER BEAM

ALSO

Pressed Steel Journal Box Lids

DAVIS BRAKE BEAM CO.

JOHNSTOWN, PA.

Sales Office: 418 Sixth Avenue, Pittsburgh, Pa.

GOULD

Side Frames Bolsters Couplers
 Passenger and Freight Journal Boxes
 Open Hearth Steel Castings

THE GOULD COUPLER CO.

New York

Works: Depew

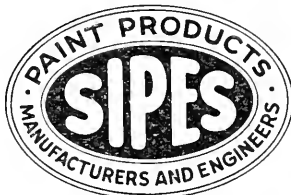
Chicago



CANDIES

Everybody likes Candy—with almost a thousand candies from which to make your selection, we can truthfully say that we have a variety to suit every taste—a box suitable for every occasion.

Lacquers
 Varnish
 Enamels
 Oil Colors



REG U S PAT OFF.

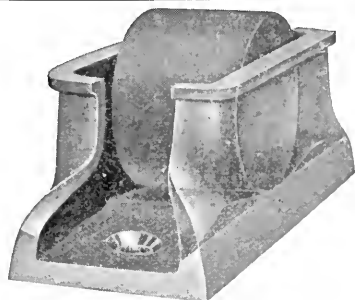
Railway and
 Industrial
 Protective
 Coatings

JAMES B. SIPE AND COMPANY
 PITTSBURGH, U. S. A.

The Q & C Company, 90 West St., N. Y. C.

Peoples Gas Building - - Chicago
 Railway Exchange Building - St. Louis

**Manufacturers of Track, Car and Engine
 Specialties**



STUCKI Side Bearings

A. STUCKI COMPANY
OLIVER BUILDING
PITTSBURGH, PA.

SINGLE PLATE CHILLED TREAD WHEELS

With

Reinforced Flanges for the Most Severe Service
Over 500,000 in Service

SOUTHERN WHEEL COMPANY



*Our tests determine the best
shoe for each type of service.*

The American Brake Shoe and Foundry Company

230 Park Ave., New York

332 S. Mich. Ave., Chicago

The Pocket List of Railroad Officials

*Used by the Officers of all Railroads on
The North American Continent*

Issued Quarterly

Subscription Price, \$6.00 per annum

Single Copies, \$2.50

Advertising rates on application

THE OFFICIAL RAILWAY EQUIPMENT REGISTER ISSUED MONTHLY

Descriptive of freight and passenger cars of the Railways and
Private Car Companies in the United States, Canada and Mexico.

Subscription Price, \$15.00 per annum.

Single Copies, \$2.00.

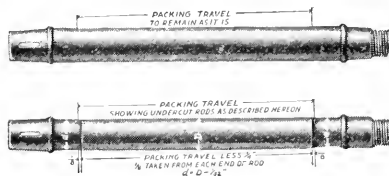
THE RAILWAY EQUIPMENT AND PUBLICATION CO.

J. ALEXANDER BROWN, Vice-President and Manager

424 West 33rd Street

New York

IF WE stated we could sell you the same steel you are now using for your piston rods at half the price you are paying, you would be greatly interested. Well, we can practically do that and make an additional saving of half the cost of labor required in preparing the rod for the engine by undercutting, as illustrated in cut below, instead of grinding or turning the wearing surface. That practice will extend the life of the rod fifty per cent or more. Paxton-Mitchell Metallic Packing will pack its own wear steam-tight until a rod has been reduced one-quarter of an inch. You will also save the cost of one set of packing; one sliding plate and one cone each time engine is in for general repairs.



Half sets of our packing segments may be reclaimed from scrap for use in making at least fifty per cent of renewals due to the four segment combination of our packing.

"The Packing That Packs"

The Paxton-Mitchell Company
OMAHA, NEBRASKA

NATIONAL FRICTION DRAFT GEAR

The Perfect Shock Absorber

Requires No Re-Adjustment

NATIONAL MALLEABLE AND STEEL CASTINGS CO.

General Office — Cleveland, O.

CONTROL OF CORROSION

Consistent action in controlling corrosion with Dearborn Scientific Treatment has saved many a railroad from heavy unnecessary expenses.

The Dearborn Treating plant aids in obtaining 100% results, by mixing exact proportions of Dearborn Treatment automatically with the water supply.

DEARBORN CHEMICAL COMPANY

310 S. Michigan Avenue, Chicago 205 East 42nd Street, New York
Farmers Bank Bldg., Pittsburgh



SYMINGTON

Malleable Iron and Steel Journal Boxes
for Passenger and Freight Equipment

FARLOW DRAFT ATTACHMENTS

THE SYMINGTON COMPANY

New York Chicago Boston Baltimore Rochester

BALL'S
Varnish Remover

OXOLIN
REGISTERED
THE IDEAL PAINT OIL

B. C.
Spirits

Ball Chemical Company

CHICAGO Office,
63 W. Van Buren Street.

Fulton Bldg., PITTSBURGH, PA.

Schaefer Drop-Forged Brake Levers



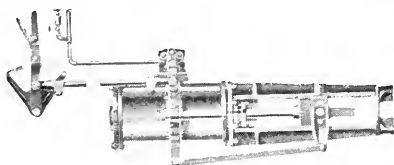
Designed to give uniform stress conditions throughout entire body of lever. Levers are drilled from templets and exact spacing between holes is thus assured.

Drop forging makes all levers uniform.

Lighter in weight with increased strength.

Schaefer Equipment Co.

General Offices: Koppers Bldg., Pittsburgh, Pa.



ALCO REVERSE GEAR

THE Alco Reverse Gear was designed to meet the demands of diversified service. While it serves acceptably in heavy freight service, it responds equally well to the needs of high speed passenger requirements. Again, in fast freight, helper and switching service it gives quick and accurate valve gear adjustments. In other words, it meets the conditions imposed in all classes of service—it does not excel in one at the expense of another.

AMERICAN LOCOMOTIVE COMPANY
30 CHURCH STREET NEW YORK CITY

... NILES-BEMENT-POND ... MACHINE TOOLS

For Locomotive, Car and Railroad Repair Shops

Also complete machine tool equipment for general machine shops as well as electric traveling cranes, trolleys and hoists, jib and wall cranes and steam hammers.

Pratt & Whitney

Machine Tools, Small Tools and a complete equipment of M. C. B. Gauges can also be furnished.

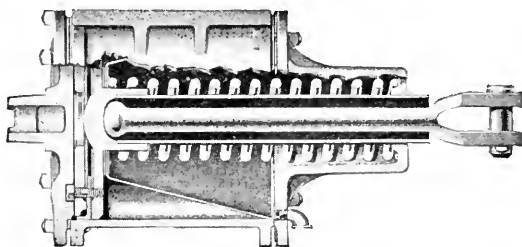
Write for Catalogs.

Niles-Bement-Pond Co. 111 Broadway, New York

Divisions of NILES-BEMENT-POND COMPANY

The Niles Tool Works Company, *Hamilton, Ohio*
Ridgway Machine Company, *Ridgway, Pa.*
Pratt and Whitney Company, *Hartford, Conn.*
Niles Crane Corporation, *Philadelphia, Pa.*

Niles Gear Company
111 Broadway, *New York*
Pittsburgh Office
Empire Building



This New Protector Keeps Cylinders Clean

A collapsible water-proof hood that prevents moisture and dirt from reaching the cylinder walls. Lengthens life of packing cups, reduces leakage, decreases maintenance cost. . . Ask for Circular Notice 1082.

Westinghouse Air Brake Co., Wilmerding, Pa.

Positive Dependability

with

Westinghouse Electrical Equipment

for

Railway Signaling Service



Westinghouse Electric & Mfg. Co.

Pittsburgh, Pennsylvania

Solving Difficult Haulage Problems

The recent increase in the weight of trains, and also in their speed, has developed new types of locomotives having greater ton-miles per hour capacity. In heavy passenger work, eight-coupled locomotives have given fine results. To meet the demands of sustained horse power on particularly hard runs, several important railroads ordered from these Works 4-8-4 type locomotives, which have given very satisfactory service.

The Baldwin Locomotive Works
Philadelphia

STANDARD STEEL PRODUCES

Steel Axles
Steel Tires



Steel Springs
Steel Billets

Rolled Steel Wheels
Steel Tired Wheels
Wrought Solid Steel Wheels
Carbon and Alloy Steel Forgings

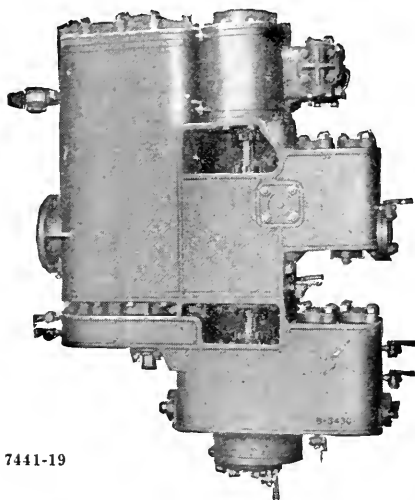
STANDARD STEEL WORKS COMPAN
PHILADELPHIA, PA.

Branch Offices:

CHICAGO NEW YORK PORTLAND SAN FRANCISCO
ST. LOUIS RICHMOND MEXICO CITY

WORKS: BURNHAM, P. A.

THE WORTHINGTON OPEN-TYPE FEED-WATER HEATER FOR LOCOMOTIVES



7441-19

1. Saves 12 per cent total fuel per year.
2. Saves 14 per cent total water per year.
3. Increases boiler capacity 10 to 13 per cent.
4. Increases drawbar pull at speed.
5. Reduces stops for water and coal.
6. Removes 80 per cent corrosive oxygen from feed-water.
7. Lessens amount of scale and purifies water.
8. Extends life of old engines by increasing steaming capacity and reducing fuel consumption.

WORTHINGTON



Literature, further describing these advantages, gladly sent upon request.

WORTHINGTON PUMP AND MACHINERY CORPORATION

Railway Department

Worthington Works: Harrison, New Jersey

District Offices in 24 Cities

*Factors that Increase
Locomotive Effectiveness*



The Locomotive
BOOSTER

Franklin Railway Supply Co., Inc.

17 East Forty-Second Street, New York

Chicago, Ill.	St. Louis, Mo.	San Francisco, Cal.
332 S. Michigan Ave.	Boatmen's Bank Bldg.	774 Monadnock Bldg.
Franklin Railway Supply Company, Limited, Montreal		
Export Department - International Railway Supply Co.		
30 Church Street, New York		

STAYBOLTS FOR ANY BOILER REQUIREMENT

F. B. C. Welded, TATE Threaded,
and Flannery Two-Piece
Flexible Staybolt Assemblages

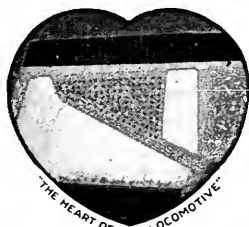
NU-TATE and TELL-TALE Bolts

Crown Stays and Rigid Bolts
(STRAIGHT OR REDUCED BODIES)
Bulletins Describing all Flannery
products mailed upon request.

FLANNERY BOLT CO.

FLANNERY BLDG.

PITTSBURGH, PA.



Nicholson Thermic SYPHONS

Syphons are promoting improved service at lower operating costs on 132 railroads.

LOCOMOTIVE FIREBOX CO.,
310 S. Michigan Ave., Chicago, Ill.

"The Heart of the Locomotive"

Hunt-Spiller Air Furnace Gun Iron

HAS THE
Strength and Wearing Qualities
THAT ARE ABSOLUTELY NECESSARY IN
LOCOMOTIVE CASTINGS

PRICES MODERATE

RESULTS GREAT

Manufactured Only By

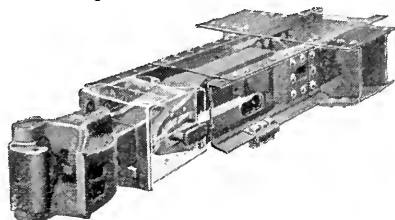
Hunt-Spiller Manfg. Corporation

J. G. PLATT, President and General Manager
OFFICE AND WORKS:
383 DORCHESTER AVENUE
SO. BOSTON, MASS.

V. W. ELLET.
Vice President

The Buckeye Steel Castings Co.

COLUMBUS
NEW YORK
CHICAGO



ST. PAUL
LOUISVILLE
LONDON

"BUCKEYE" Yoke and Draft Attachments

FORT PITT SPRING COMPANY

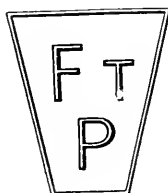
PITTSBURGH, PA.

SPRINGS BOTH COIL
& ELLIPTIC

For Railroad Service

ALLOY SPRINGS A SPECIALTY

Malleable CASTINGS OF UNIFORM QUALITY ARE PERMANENT



AVERAGE TESTS

for 15 months

1104 Consecutive Heats

Tensile Strength. Yield Point Elong. %
Lbs. per sq. in. Lbs. per sq. in. in 2 in.

HIGH	60952	39639	27.5
LOW	56550	37679	23.9

*This Trade-mark is your security on
Railroad Car Castings*

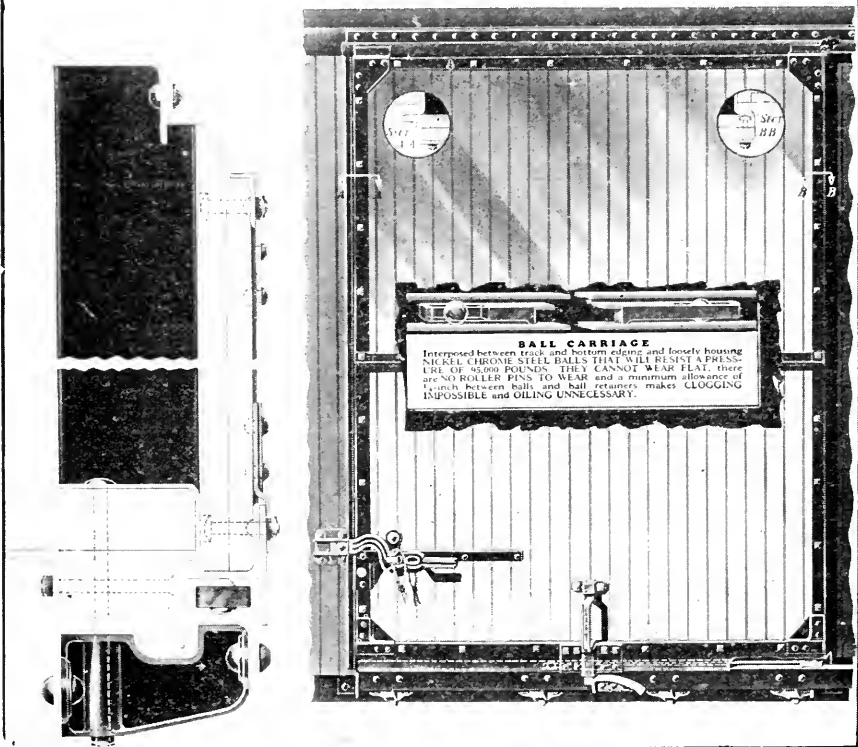
Send Blue Prints for Estimates

Fort Pitt Malleable Iron Company
PITTSBURGH, PA.

INDEX—ADVERTISERS.

NAME	Page	NAME	Page
Air Reduction Sales Co.....	xxiv	Penn Iron & Steel Co.....Front	Cover
American Brake Shoe & Foundry Co.....	iii	The Pocket List of Railroad Officials	iii
American Locomotive Co.....	vi	Pressed Steel Car Co.....	xviii
American Steel Foundries.....	xviii	The Q & C Co.....	ii
Baldwin Locomotive Works....	viii	Railway Equip't. and Publication Company	iii
Ball Chemical Co.....	v	Railway Steel Spring Co.....	xvii
Briggs & Turivas.....	xvii	Reymer & Bros., Inc.....	ii
Buckeye Chemical Co.....	xxiv	Safety Car Heat. & Lighting Co....	xvii
The Buckeye Steel Casting Co.	xi	Schaefer Equipment Co.....	v
Camel Sales Co.....	xviii	Wm. Sellers & Co., Inc.....	xxiii
Chicago Railway Equip. Co.....	xiii	Sipe, James B., & Co.....	ii
Davis Brake Beam Co.....	i	Southern Wheel Co.....	iii
Dearborn Chemical Co.....	iv	Standard Safety Nut Corp. Front	Cover
Flannery Bolt Co.....	x	Standard Steel Car Co.....	xix
Fort Pitt Malleable Iron Co.....	xi	Standard Steel Works Co.....	viii
Fort Pitt Spring Co.....	xi	The Standard Stoker Co.....	xxi
Franklin Rwy. Supply Co., Inc.	ix	The L. S. Starrett Co.....Inside Front	Cover
General Refractories Co.....	xx	Steel Car Forge Co.....Front	Cover
The Gould Coupler Co.....	ii	Stucki Co., A.....	lii
Grip Nut Co.....	xxii	The Superheater Co.....Front	Cover
Hagan, George J. Company	Inside Front	The Symington Co.....	v
Hale & Kilburn Co.....	xx	Tuco Products Corp.....	xxii
Hunt-Spiller Mfg. Corporation	x	Union Spring & Mfg. Co.....	xiv
Johnson Bronze Co.....	i	Union Steel Casting Co.....	xix
The Kerite Insulated Wire & Cable Co., Inc.....	xxi	U. S. Metallic Packing Co.....	xxii
Locomotive Firebox Co.....	x	Vapor Car Heating Co., Inc.....	xix
Lox-On Devices Corp.....Front	Cover	Vulcan Crucible Steel Co.....	xxii
Nathan Mfg. Co.....	xx	Westinghouse Air Brake Co.....	vii
National Malleable and Steel Castings Co.	iv	Westinghouse Elec. & Mfg. Co.	vii
Niles-Bement-Pond Co.....	vi	Worthington Pump and Machinery Corporation	ix
The Okonite-Callender Cable Company	Front		
Paxton-Mitchell Co.....	iv		

THE BALL BEARING CAR DOOR



It Eliminates

FRICTION

DAMAGED GUIDES

FLATTENED ROLLERS

NECESSITY OF OILING

SNOW AND ICE FROM THE TRACK

UNSATISFACTORY OPERATION DUE TO INACCURATE MACHINING

UNSATISFACTORY OPERATION DUE TO CORROSION

PILFERING

BROKEN HANGERS

WEAR OF ROLLER PINS

"BUTTING" IN TRANSIT

MANUFACTURED and SOLD

IN BOTH TOP HUNG AND BOTTOM SUPPORTED TYPES BY THE

CHICAGO RAILWAY EQUIPMENT COMPANY

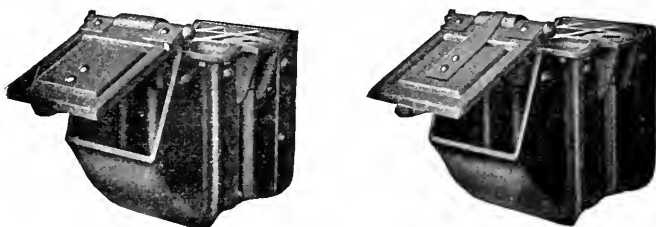
CHICAGO, ILLINOIS

Union Spring & Manufacturing Co.

RAILROAD SPRINGS

Kensington All Steel Journal Boxes

STEEL CASTINGS



Lightest and Strongest M. C. B.
Journal Boxes Made

— — — — —
WORKS:
NEW KENSINGTON, PA.
— — — — —

PITTSBURGH OFFICE
2001 CLARK BUILDING

NEW YORK	-	-	-	50 Church Street
CHICAGO	-	-	-	Fisher Building
RICHMOND, VA.	-	-	-	Mutual Building
LOUISVILLE, KY.	-	-	-	Equitable Life & Cas. Bldg.
BALTIMORE, MD.	-	-	-	Munsey Building
PHILADELPHIA, PA.	-	-	-	226 South 15th Street

The Railway Club of Pittsburgh

Organized October 18, 1901

Published monthly, except June, July and August, by The Railway Club of Pittsburgh, J. D. Conway, Secretary, 515 Grandview Ave., Pittsburgh, Pa.
Entered as Second Class Matter February 6, 1915, at the Postoffice at Pittsburgh, under the Act of March 3, 1879.

Vol. XXIX
No. 1.

Pittsburgh, Pa., Nov. 26, 1929

\$1.00 Per Year
25c Per Copy

OFFICERS FOR 1929-1930

President

E. W. SMITH,

Vice President, The Pennsylvania Railroad,
Pittsburgh, Pa.

First Vice President
PROF. LOUIS E. ENDSLEY,
Consulting Engineer,
Pittsburgh, Pa.

Secretary
J. D. CONWAY,
1841 Oliver Building, Pittsburgh, Pa.

Second Vice President
J. E. HUGHES,
Superintendent, P. & L. E. R. R.,
Pittsburgh, Pa.

Treasurer
E. J. SEARLES,
Manager, Schaefer Equipment Company,
Pittsburgh, Pa.

Executive Committee

FRANK J. LANAHAN, Pres., Fort Pitt Malleable Iron Co., P. O. Box 1054, Pgh., Pa.
A. STUCKI, Engineer, A. Stucki Company, 419 Oliver Bldg., Pittsburgh, Pa.
SAMUEL LYNN, Supt., Rolling Stock, P. & L. E. R. R., McKees Rocks, Pa.
D. F. CRAWFORD, Consulting Engineer, 5243 Ellsworth Avenue, Pittsburgh, Pa.
F. G. MINNICK, General Manager, P. & L. E. R. R., Pittsburgh, Pa.
G. W. WILDIN, Asst. Vice President, Westinghouse Air Brake Co., Wilmerding, Pa.
E. J. DEVANS, General Superintendent, B. R. & P. Ry. Co., Du Bois, Pa.
W. S. McABEE, Vice President, Union Railroad Co., East Pittsburgh, Pa.

Membership Committee

E. A. RAUSCHART, Mechanical Superintendent, Montour Railroad, Coraopolis, Pa.
OTIS R. HALE, Dis. Sales Mgr., American Loco. Co., Farmers Bank Bldg., Pgh., Pa.
T. E. CANNON, Gen. Supt., Locos. & Equipment, P. & W. Va. Ry., Pittsburgh, Pa.
GUY M. GRAY, Superintendent Motive Power, B. & L. E. R. R., Greenville, Pa.
C. E. PEIFFER, Master Car Builder, B. R. & P. Ry., Du Bois, Pa.
J. S. LANAHAN, Vice President, Fort Pitt Malleable Iron Co., Pittsburgh, Pa.
E. EMERY, Railway Supplies, 304 Oliver Building, Pittsburgh, Pa.
R. M. LONG, Air Brake Inspector & Instructor, P. & L. E. R. R., McKees Rocks, Pa.
DONALD O. MOORE, Mgr. of Traffic Division, Chamber of Commerce, Pittsburgh, Pa.
J. A. RALSTON, Mechanical Engineer, Union Railroad, Frick Bldg. Annex, Pgh., Pa.

Subject Committee

C. O. DAMBACH, Supt., P. & W. Va. Ry. Co., Wabash Bldg., Pittsburgh, Pa.
KARL BERG, Asst. Supt., Motive Power, P. & L. E. R. R., McKees Rocks, Pa.
S. G. DOWN, Vice President, Westinghouse Air Brake Company, Wilmerding, Pa.

Finance Committee

W. C. HANSEN, Sales Engineer, A. Stucki Co., 419 Oliver Bldg., Pittsburgh, Pa.
T. M. BLAKLEY, R. F. of E., Pennsylvania R. R., 101 Emerson Ave., Aspinwall, Pa.
J. H. CARROLL, JR., Freight Traffic Mgr., B. & O. R. R., 821 Oliver Bldg., Pgh., Pa.
W. P. CUNNINGHAM, Supt. Motive Power, Monongahela Ry., 3169 Ashlyn St., Pgh., Pa.
LLOYD SUTHERLAND, General Storekeeper, P. & L. E. R. R., McKees Rocks, Pa.

Entertainment Committee

CHARLES ORCHARD, Special Agent, Traffic Dept., Carnegie Steel Co., Pgh., Pa.
F. M. BROWN, Supt., P. & L. E. R. R., Pittsburgh, Pa.
ROBERT ROGERS, Sales Agent, American Car & Foundry Company, Pittsburgh, Pa.

Reception Committee

O. L. WRIGHT, District Manager, The Duff-Norton Mfg. Co., Pittsburgh, Pa.
CHARLES J. NIEMAN, Secretary & Treasurer, Penn Iron & Steel Co., Creighton, Pa.
GEORGE F. LAURENT, Sales Engineer, Fort Pitt Malleable Iron Co., Pgh., Pa.
A. B. WHITE, Superintendent, B. R. & P. Ry. Co., Punxsutawney, Pa.
F. I. SNYDER, Vice President and General Mgr., B. & L. E. R. R., Pittsburgh, Pa.
COL. H. C. NUTT, Pres. & Gen. Mgr., Monongahela Railway Co., Pittsburgh, Pa.

Past Presidents

*J. H. McCONNELL	October, 1901, to October, 1903
*L. H. TURNER	November, 1903, to October, 1905
F. H. STARK	November, 1905, to October, 1907
*H. W. WATTS	November, 1907, to April, 1908
*D. J. REDDING	November, 1908, to October, 1910
*F. R. McFEATHERS	November, 1910, to October, 1912
A. G. MITCHELL	November, 1912, to October, 1914
*F. M. McNULTY	November, 1914, to October, 1916
J. G. CODE	November, 1916, to October, 1917
*D. M. HOWE	November, 1917, to October, 1918
*J. A. SPIELMANN	November, 1918, to October, 1919
H. H. MAXFIELD	November, 1919, to October, 1920
FRANK J. LANAHAN	November, 1920, to October, 1921
SAMUEL LYNN	November, 1921, to October, 1922
D. F. CRAWFORD	November, 1922, to October, 1923
GEO. D. OGDEN	November, 1923, to October, 1924
A. STUCKI	November, 1924, to October, 1925
F. G. MINNICK	November, 1925, to October, 1926
G. W. WILDIN	November, 1926, to October, 1927
E. J. DEVANS	November, 1927, to October, 1928
W. S. McABEE	November, 1928, to October, 1929

*—Deceased.

Meetings held fourth Thursday of each month except June, July and August.

PROCEEDINGS OF MEETING

NOVEMBER 26, 1929

The meeting was called to order at the Fort Pitt Hotel at 8:00 o'clock P. M., with Vice-President L. E. Endsley in the chair.

The following gentlemen registered:

MEMBERS

Allison, John	Horner, William
Altsman, W. H.	Irwin, R. D.
Beam, E. J.	Kalik, John R.
Berg, K.	Kellenberger, K. E.
Blakley, T. M.	Kelly, Leo J.
Bonhoff, E. L.	Klann, Peter B.
Bowen, James T.	Kummer, Joseph H.
Brinkhoff, W. H.	Landis, William C.
Buffington, W. P.	Laurent, Joseph A.
Byrom, W. Reed	Lobez, P. L.
Campbell, J. E.	Lowe, W. D.
Campbell, J. T.	Lowman, John R.
Carlson, L.	Lynch, Bernard J.
Carson, John	Masterman, T. W.
Carter, William	Meyers, William
Christy, F. X.	Miller, J.
Conway, J. D.	Mills, C. C.
Cotter, George L.	Minnick, F. G.
Craig, John R.	Mitchell, F. K.
Crawford, D. F.	Mitchell, W. S.
Croke, Thomas F.	Moore, Donald O.
Dambach, C. O.	Moses, G. L.
Davis, Charles S.	Moyer, Oscar G. A.
Descamp, J.	Muck, Joseph H.
Dixon, T. L.	Nagel, James
Durkin, James E.	McIntyre, R. C.
Edwards, C. H.	McNulty, A. P.
Endsley, Prof. L. E.	Painter, C. L.
Fitzgerald, T.	Painter, Joseph
Flinn, R. H.	Paisley, F. R.
Freshwater, F. H.	Pringle, J. L.
Fults, J. H.	Pringle, P. V.
Gorman, Charles	Provost, S. W.
Guger, Julius	Rauschart, E. A.
Hackett, C. M.	Reardon, J. P.
Hall, Chester C.	Reeve, George
Hansen, W. C.	Robinson, R. L.
Harvat, Frank V.	Saltic, Thomas
Hilstrom, A. V.	Sample, W. E.
Holmes, E. H.	Sattley, E. C.
Hood, J. M.	Seiss, W. C.

Seroky, Edward A.	Tipton, G. M.
Severn, A. B.	Trantman, Harry J.
Shannon, David E.	Tucker, John L.
Sharp, H. W.	Van Wormer, G. M.
Shellenbarger, H. M.	Waldron, F. G.
Shelly, D. L.	Whalen, D. J.
Simon, Philip	Wheatley, William
Smith, R. W.	Wheeler, C. M.
Spinning, Charles F.	Wikander, O. R.
Steele, I. H.	Winslow, S. H.
Stevens, L. V.	Woodward, Robert
Stevens, R. R.	Wright, John B.
Stucki, A.	Wynne, F. E.
Young, F. C.	

VISITORS

Beach, M.	Miller, H. R.
Birt, Thomas C.	Munn, W. H.
Bowman, Dr. John G.	Nagel, W. A.
Carter, E. H.	Olguin, Joseph
Davis, David	Pidgeon, B. J.
Davis, William B.	Powelson, Frank
Dunham, C. W.	Singer, M. A.
Emsheimer, Louis	Sixsmith, G. M.
Glaister, Thomas W.	Smith, E. S.
Goodwin, Arthur E.	Smith, Sion B.
Harkleroad, R. E.	Staats, C. C.
Hazlett, J. F.	Thompson, H. A.
Horton, H. R.	Valley, Rupert R.
Lewis, S. B.	Weight, Leland S.
Mains, Thomas	Woods, G. M.

The call of the roll was dispensed with, the attendance being recorded on the registration cards.

By common consent the reading of the minutes of the last meeting was dispensed with, as the Proceedings have already been distributed to the members.

CHAIRMAN: Your President found it impossible to be here tonight and asked me to take charge of the meeting.

You have noticed the innovation of a very beautiful concert preliminary to the meeting. I wish to tell you that the fine music to which you have been listening is brought to you by the Westinghouse Air Brake Company musicians and we are indebted to the Westinghouse Air Brake Company and to these splendid young men for this excellent musical treat.

That is a suggestion, by the way. It may be that some other company in Pittsburgh has in its ranks artistic talent

which they might desire to contribute to add interest to our meetings. If there should be any such, I am sure we would be glad to welcome them.

We are now ready for the list of proposals for membership.

SECRETARY: I have the following proposals for membership:

Bagent, H. C., Asst. R. F. of E., Pennsylvania Railroad, 219 Second Street, Monongahela, Pa. Recommended by H. G. Huber.

Dailey, F. J., Lubrication Engineer, Vacuum Oil Company, 30 Clyde Avenue, Jamestown, N. Y. Recommended by C. E. Peiffer.

Davies, James, General Auditor, Alton & Southern Railroad, Oliver Building, Pittsburgh, Pa. Recommended by J. P. Glaser.

Ellis, Daniel S., Sales Engineer, Worthington Pump & Machinery Corporation, Harrison, N. J. Recommended by O. F. Goodman.

Emsheimer, Louis, Machinist, Pennsylvania Railroad, 1439½ Elm Street, Wilkinsburg, Pa. Recommended by R. P. Woodward.

Guger, Julius, Sub Foreman, Pressed Steel Car Company, 1600 Harlow Street, Corliss Station, Pittsburgh, Pa. Recommended by G. M. Van Wormer.

Holmes, Blaine, Asst. Yard Master, Pennsylvania Railroad, 258 Greensburg Pike, Turtle Creek, Pa. Recommended by J. G. Dennis.

Jones, William J., Sub Foreman, Pressed Steel Car Company, 1513 Broadway, West Park, McKees Rocks, Pa. Recommended by G. M. Van Wormer.

Klann, Peter B., Sub Foreman, Pressed Steel Car Company, 801 Eleventh Street, West Park, McKees Rocks, Pa. Recommended by G. M. Van Wormer.

Kondej, Henry, Tester, Westinghouse Air Brake Company, 353 Marguerite Avenue, Wilmerding, Pa. Recommended by G. L. Cotter.

Lowman, John R., Steel Chaser, Pressed Steel Car Company,

- 3303 Fleming Avenue, N. S., Pittsburgh, Pa. Recommended by G. M. Van Wormer.
- Muck, Joseph, Crane Director, Pressed Steel Car Company, 328 Journal Street, West End, Pittsburgh, Pa. Recommended by G. M. Van Wormer.
- Myers, William F., Crane Director, Pressed Steel Car Company, 326 Woodward Avenue, West Park, McKees Rocks, Pa. Recommended by G. M. Van Wormer.
- Poffenberger, J. C., Superintendent, Pennsylvania Railroad, Fayette Title & Trust Co. Building, Uniontown, Pa. Recommended by H. G. Huber.
- Reed, J. B., Treasurer & Tax Collector, Stowe Township, 550 Broadway, McKees Rocks, Pa. Recommended by G. M. Van Wormer.
- Seibert, D. D., Asst. Train Master, Pennsylvania Railroad, 241 Second Street, Conemaugh, Pa. Recommended by J. G. Dennis.
- Sheets, C. L., Asst. Freight Train Master, Pennsylvania Railroad, 324 Pennsylvania Station, Pittsburgh, Pa. Recommended by J. G. Dennis.
- Sixsmith, G. M., Superintendent, Pennsylvania Railroad, 1 Eastern Avenue, Aspinwall, Pa. Recommended by T. M. Blakley.
- Snitchurst, James G., Engine House Foreman, Pennsylvania Railroad, Youngwood, Pa. Recommended by H. G. Huber.
- Spotts, Arthur, Engine House Foreman, Pennsylvania Railroad, 2925 Pyramid Avenue, Brentwood, Pa. Recommended by H. G. Huber.
- Steen, W. E., District Storekeeper, B. & O. R. R., B. & O. Depot, Pittsburgh, Pa. Recommended by O. L. Wright.
- Stracka, John S., Clerk, Pressed Steel Car Company, 313 Helen Street, McKees Rocks, Pa. Recommended by G. M. Van Wormer.
- Witherspoon, B. H., President, Pittsburgh Testing Laboratory, Locust & Stevenson Streets, Pittsburgh, Pa. Recommended by D. F. Crawford.

CHAIRMAN: These names will be referred to the Executive Committee, in accordance with our rules, and upon ap-

proval by them the gentlemen will become members without further action by the Club.

Is there any further business which should be attended to at this time?

SECRETARY: Since our last meeting I have received information of the death of one of our members, Mr. D. L. Duffey. He had just been proposed for membership when he met with a fatal accident.

CHAIRMAN: If there is no further business, it gives me great pleasure at this time to introduce to you Dr. Bowman, Chancellor of the University of Pittsburgh, who will speak to you upon the subject. "What is a great job."

WHAT IS A GREAT JOB?

Condensed Report of Talk November 26, 1929,

By JOHN G. BOWMAN,

Chancellor, University of Pittsburgh, Pittsburgh, Pa.

What is a great job? If on this subject I think straight and think along experience similar to yours, and if after a little while I come to a summary and say "Things are like that," you will say, "Yes, things are like that." If, however, my thinking is hazy, if I drag in such words as "inspiration" and "service" which you do not like, you probably will say, at least to yourselves, at the end, "No, things are not like that." An artist in New York recently told me how things are in Pittsburgh. He said that no life here could be worth living. I had half started to answer when I realized that we had practically no common ground from which to talk and then I recalled Huckleberry Finn's advice of "Never argue with a nigger." So I kept still. Now, while your work in railroads and mine in a university seem to be far apart, I start with the idea that we are not, after all, far apart and that we have a large acreage of common ground for this discussion.

Now, a good job is one that fits the worker, or one in which the worker fits the job. The two are the same. In other words, a man with a good job is always finding himself in his work; that is, he is always calling into action his own natural gifts and capabilities. Such a condition is, I think, the chief reason why a man sings or wants to sing at his work. It is the reason why you and I sometimes say, "Isn't it spendid just

to live, to be alive!" Now if things are like that, then it follows that a certain job may be a good one for one man and a bad one for another; and it follows, too, that each of us ought to use his complete supply of wisdom in finding a right job for himself. All of this assumes that you and I are not alike; that no two of us are alike. We know this, but we forget how important the matter is. Let us look at some of the basic differences among yourselves.

First, there is the type of man who when he sees the first blackbird in early spring says, "The old year is done," or "The world is young again." His mind seeks impulsively the meaning of the blackbird. He reaches mentally for the general principle behind the blackbird. He tends to think in the abstract; he analyses, he has power not only to see the parts of a difficult problem, but he takes delight in seeing them, each in relation to the whole. His mind clicks, we say, when he is given a bad mess to clear up. A man with such a mind is apt to find satisfaction in law, in mathematics, in philosophy, or in a railroad when the work calls for the application of such subjects. He delights to sail alone the "uncharted seas." When, in addition, this man has what we call "guts" and drive, he is the Lincoln type.

Second, there is the man who when he sees that same blackbird says, "What a gloss is on that bird!" He sees the surface, the particular detail; he sees and thinks in the concrete and only by hard intellectual effort can he get beyond the concrete. He is unhappy on any journey into the abstract. He is like the farmer who, when he saw a camel for the first time, said, "There ain't no such animal." The farmer said this with some humor, to be sure, but he said it also because he was unable to relate the camel to any generalization and, then, not trustful of what his eyes saw, had no way out but to deny the existence of the camel. Such a man would be very unhappy in a job which required him, through the day, to make independent judgments. In fact, such a man, when called upon to make analyses and decisions, is sometimes broken nervously in a month. He might, however, be both happy and useful in routine work or in work as a mechanic, or an accountant, or a musician of the technician type.

Third, there is the man who **feels** his way along. He may be more or less thoughtful and capable of analysis, but he trusts his feelings as a guide for action. Not long ago there was a

young man of this type, Francis Ledwidge, who was a grocer in Dublin. He felt the pulse or rhythm of the world in which he lived. Much of his time, instead of doing up sugar into packages, he wrote verses on the paper sugar-bags about what the seasons meant to him, or about what the sunsets and rains and stars meant. Most of all, he wrote about blackbirds. Well, he made a poor grocer, but he made Ireland and England see and feel a new wonder and charm about blackbirds and their whistled notes. He was a dreamer and poet. I do not think of any railroad work which would be a good job for him except, perhaps, in the advertising department. You and I have some of the dreamer in us, but not enough, usually, to keep us from being practical.

Philosopher, mechanic, dreamer—here are three types. We might go on and name other types, the one not better than the other, but merely different. It happens, though, that no man falls into an exact type. You and I are not alike; no two men are alike. Each of us is made according to a special recipe, a little of this type thrown in, a little of that, and more of another. Human nature is complicated stuff. On the other hand, a railroad organization is a complicated affair. You have, it seems to me, about as many kinds of work to do as there are varieties of dependable human types and I ask whether or not the success of your organization does not depend primarily upon fitting the right sort of man into each particular job.

Granted, however, that a railroad had exactly the right man in each of its thousands of jobs, still, as it seems to me, there would be much to do before a perfect organization were attained. First, you and I want to feel that we are of economic worth, that our community, at least, is more comfortable or happier because of our respective efforts. Now the railroad, far more than our vast population knows, is directly responsible for much of the health, the necessities, the luxuries, and leisure of our cities and of our agricultural districts. In fact, the life of this nation would not be what it is at all without the railroads. But do the railroad men themselves know and feel and care about the significance of their individual jobs? "Right next to the welfare of my family," said a man to me recently, "I hold the welfare of this company" (which he worked for). That is the spirit. The value of a railroad in terms of human betterment justifies that spirit. It ought to send home the man who sweeps out freight cars to tell his wife with pride that after all his work is needed to keep the trains running.

In addition to loyalty based upon sound reason, there is, second, another quality which I want to mention. A job is a sort of journey. It is to many of us our one journey. We think we can go the way alone, and perhaps we can. But we can go vastly better now and then with a bit of help. By help I mean encouragement and approval. Long ago in little European towns the baker and the grocer and the shoemaker and others used to form an orchestra. These men learned to play together. In time they learned the value of encouraging one another, and out of that way of doing came men like Beethoven. Without the encouragement and much honest goodwill from time to time Beethovens would be fewer than they are. As railroads, it seems to me, perfect the human side of their organization, there will be along their tracks in small towns or large ones, many a "first citizen" who is a station master or a shop foreman. And he will be a "first citizen" because he is just the right man for the job and because he sees and feels and takes pride in the significance of his job and because his personality, coming into its full strength, radiates happiness and makes everyone proud of him and glad that he is about.

CHAIRMAN: I am sure we have all listened with a great deal of interest to the analysis of a thing which has been close to all of us. I have enjoyed very much listening to Dr. Bowman. It brings back a thing in teaching which has always impressed me. At the University of Franklin, Indiana, there was an old professor named Dr. Phillips, who had taught at Franklin College for many years. Of the 240 students who have been there every year for that forty years, he could call the first name of every one of them while they were in college. So this teaching game there was a case in which old Professor Phillips went around with the boys and girls and gave them a pat on the back, which Dr. Bowman says is a good thing.

I talked with an executive less than two months ago, one who has been a very successful executive, and he said this was one of his absolute rules: Irrespective of how much a man needed calling down, he either found something to commend him for before he left the room or fired him. This thing of giving some praise now and then is a point which we all should think about.

It may be that some of you would like to ask questions or have some comments to make on the subject. It is our

custom to open up our addresses to a round table discussion and may be some one has something to say. Mr. Crawford?

MR. D. F. CRAWFORD: Mr. President and Gentlemen: I do not think I can add anything on the subject that Dr. Bowman has so completely covered. Most of you know that I have had considerable experience in railroad work, and I am sure all of you know that any measure of success is only accomplished by the pleasant word you receive from your superior officers and the pleasant word you can pass on to those who are working for you. I am sure that it is always worth while and brings good results.

CHAIRMAN: Mr. Stucki, did I see you getting up?

MR. A. STUCKI: I want to say that I appreciate very much what Dr. Bowman has said, and I fully agree with him that appreciation and encouragement are really the fundamentals of life, both on the university and the railroad side of life. And even down to childhood the same holds true. Take for example, a boy two or three years old. Like all children he is untidy. He throws things all around, and if there is any dirt to be found he will be in it. There are two ways of treating that case. When a friend comes in the mother says: "That Johnnie is a little devil. When there is a puddle he is in it. I clean his shoes a dozen times a day, and look at them now." That is one way. The other is to say to the friend that Johnnie is a fine boy, he is always tidy and he will make a great boy. Believe me, that boy is in the corner of the room hearing everything that is said. He may be only two or three years old, but that rings true. That is all I want to say.

CHAIRMAN: Mr. Fitzgerald, what have you to say?

MR. THOMAS FITZGERALD: Mr. Chairman, and Dr. Bowman: I was disappointed. I have never missed an opportunity to hear Dr. Bowman. He did not say a thing about a real big job, the Cathedral of Learning. He did not have to talk about railroads, he did not have to talk about executives. It seems to me if he had given us the story, as I have heard him tell it, of that wonderful job he is putting over in the Oakland district, we would go away from here understanding at least one big job.

I would not want to comment on another fellow's job. I do believe that Dr. Bowman has developed, as we say in our

game, the technique of thinking out methods for stimulating the thinking of young persons. He has no superior in this country for his particular job. We would be greatly interested if the Chancellor could be induced to tell us about some of his visions in connection with the Cathedral of Learning.

Would it be all right for me to say something about the Transportation Room?

DR. BOWMAN: Go ahead.

MR. FITZGERALD: The Chancellor has an idea which is being sponsored by the railroad men and other transportation men. He has even let the street railway people in on it. It is that those interested in transportation should have a Transportation Room in the Cathedral of Learning for the stimulation of those who want to learn about transportation. The idea is to furnish and decorate a room as a sort of center for transportation interests. It could be so arranged and decorated as to stimulate interest in and thought about transportation. It could serve as a lecture or a conference room. The Chancellor has in mind a Transportation Conference, somewhat similar to the world-wide coal conference that is conducted by the Carnegie Institute, a world-wide conference on transportation to be held at the Cathedral of Learning. Mr. Whiter, Mr. Taggart, Mr. Yohe and a group of men in other lines of transportation are considering the best method of approaching the problem of furnishing and equipping this room. I wish everyone here would give that matter consideration. If you have any ideas in connection with it will you address the Chancellor, or me, and let us know what you think?

CHAIRMAN: Dr. Bowman, will you say something further about the Cathedral of Learning?

DR. BOWMAN: Just a few words. Mr. Fitzgerald is very nice in asking that I talk about a certain high building. That, anyway, is what I think he means.

Well, we have been working now for about nine years on that building. It takes a long time to get such an idea born, and approved of, and partially paid for. The steel construction is up, the top beam being 523 feet, or forty-one floors, above the ground. The fourteen-acre square about the building is paid for. The stone walls are being set. But, now, what is the idea? A building, no matter how splendid it is, is not a uni-

versity. No, I agree with that. But a building, if it is packed full enough of right meaning, can be a considerable part of the educational plan of a university. That is the idea. This high building is full of meaning—the kind, I hope, that none of us can miss. Let us begin with the inside and see what is there.

As you enter the first floor of the building by any one of the three entrances, you come to a Commons Room about 200 feet long by 100 feet wide. Around the room are to be Gothic arches, each about 60 feet high, plain, dignified, going up and up, making you feel somehow that you want to be your best self; that somehow you are carried along, as by a great hymn, to a desire for the fulfilment of your own possibilities. That mood in itself is good education, a more important part of education than has generally been discovered. For one thing, the mood insists upon good manners, and good manners are important in education. You can not walk into the Commons Room with your hat on; the mood itself will not let you act in that way.

Around this Commons Room are three floors of recitation rooms. The rooms on each of these three floors open upon a corridor from which you can look into the Commons Room. Let us go into some of the recitation rooms on the first floor. Here fourteen different nationality groups, living in and about Pittsburgh, are trying to express their respective cultural backgrounds. These groups are:

Italians	Czechoslovaks
Hungarians	Germans
Yugoslavs	Scandinavians
Russians	Roumanians
Poles	Chinese
Greeks	French
Scotch	English

These groups, as I have said, are at work, trying to express, each in a recitation room, their respective cultural backgrounds. The Scandinavians, for example, will suggest in their room the Gothic arch which, they believe, they originated in wood; and again they will suggest on the walls the all-over design which has characterized their art development. And here and there in their design they want their national colors, blue and gold. Above the fireplace they want, carved in stone, a record of the chief events which have made the Scandinavian people what they are. To the last detail the workmanship on the chairs, doors,

windows and walls must be honest and sincere and historically representative of their own growth.

In a similar way the Italians, Roumanians, Yugoslavs, Czechoslovaks, Germans, English, Scotch and the rest who make up the population of Pittsburgh will express their cultural backgrounds. All of these rooms will be on the first floor of the Cathedral of Learning. That floor will be a meeting ground for all of these people in which they express not only their own cultural backgrounds, but also their own hope for their children in this new country. The idea goes far beyond the mere assembling of national rooms. It is a simple, yet dramatic, declaration of ambition, and of a desire for intellectual advance, for spiritual fineness and for good citizenship. The money which these people have given has, in many instances, meant real sacrifice; and their earnestness in the purposes of the rooms has been an inspiration. In fact, these rooms, together with the rest of the high building, have become symbols of an educational ideal. Here, it is easy to think, students will meet in an atmosphere that is dignified and beautiful; they will meet not to "play a game" with a professor to get the best mark possible for the least work possible; but rather they will meet as though on a great journey. "Your privilege here is to find out what you can do best and how to do it; you start here on that life which will mean for you most usefulness and happiness, and no day is long enough in which to work"—that is what the mood says. Such a mood is inspiration both to students and teachers. Here, in the Cathedral of Learning, is a supreme effort to catch the right atmosphere for achievement in education.

The same idea, to be expressed in other ways, will run through other floors of the building. What it will all mean to Pittsburgh is beyond estimate. This much we know: it deals with Pittsburgh's greatest asset, its youth. If that youth goes into careers here with heads clear and hearts large nothing much can go wrong.

CHAIRMAN: Has any one else anything to say? Mr. Flinn?

MR. R. H. FLINN: I want to say in the first place that I have certainly enjoyed Chancellor Bowman's address and the later remarks he has made. I have felt inspired myself with a good many of the incidents he has related because it touched

a sympathetic chord in my own heart and mind and it recalls something of the experience of my own earlier days. I remember when I was a small lad and had a pair of shoes that were not very good, a little torn; I got the old shoe brush and shined them up and I was going out one afternoon with those shoes on, but I was a little ashamed of them and I said to my father, "I wish I had another pair of shoes. These don't look as good as some of the other boys are wearing." He said, "That's all right, you have got them shined up and you look as well as anybody else," and I felt I would be all right in them. In other words I needed a little word of encouragement. This thing of running a great university—Chancellor Bowman remarked that he did not know anything about running a railroad, and we did not know much about running a university, but I am sure that if Chancellor Bowman had been placed in the railroad game instead of the university he would have given just as good an account of himself.

You know the railroad game is a great educational institution itself and I do not believe any of us would get anywhere in running a railroad if we did not practice, whether consciously or not, a good many of the precepts and principles which Chancellor Bowman has so ably illustrated and described to us tonight. I have told a good many of our people that our big job after all is one of education, and we can't just go along and content ourselves with asking a fellow why he didn't do this or that, but we have got to positively show him what we want done and why we want it done. Any man, whether supervisor, or workman in the ranks, or what not, will do a better job and get far better results if we tell him what we want done and how we want it done—if he does not happen to have a better way to do it than we can tell him. Sometimes we find that out also. We have on our railroad an institution for bringing out new ideas, and occasionally we get some that we wish had not been suggested—but after all the thought behind that is to bring out the spirit of the rank and file and get them to help us. Perhaps out of a thousand suggestions we may get a good per centage that are not worth much, but we get many that are very valuable. We are trying to encourage our rank and file to do just what Chancellor Bowman is trying to encourage his students to do. If we have an engine cleaner we want him to be a first class engine cleaner and be proud of that job. If we have an engine man running an engine we want him to be proud of that job. And we want that spirit

to prevail throughout our entire organization. We do not think we have got nearly as far as we can get, but there has been a great deal of attention paid to that because we recognize in the railroad game that it means this very thing that Chancellor Bowman has been telling us about—We can not get real service out of our organization unless we have everybody with us. And from now on I shall be inspired even more along the line of education and encouragement to try to bring up our service to the point where Chancellor Bowman will be able to more readily recognize it than he has so far.

CHAIRMAN: Has any one else anything to add?

MR. F. G. MINNICK: Chancellor Bowman intimated during his talk that he did not know anything, or at least not very much about running a railroad. I will say that if he will come over to the Lake Erie any time I will find a job for him. After listening to what he has said I think he could probably teach us something. The mystery to me is that Chancellor Bowman, as busy as he must be all the time, with all the things he is trying to do, will take the time to spend an evening with us and give us such a wonderful talk as he did. I would move you, Mr. President, that we extend to him a vote of thanks in appreciation of his address.

The motion was seconded and prevailed by a unanimous rising vote.

There being no further business, on motion, adjourned.

J. D. CONWAY, Secretary.

In Memoriam

D. L. DUFFEY
Died October 28, 1929

R E S E R V E D

CAR LIGHTING

COMPLETE EQUIPMENT
ELECTRIC OR GAS



The Safety Car Heating and Lighting Co.

New York Chicago St. Louis Boston Philadelphia San Francisco Montreal

RAILWAY STEEL-SPRING CO.

Springs, Steel Tired Wheels,
Locomotive and Car Wheel Tires.
Pressed Steel Journal Box Lids

GENERAL OFFICE, 30 CHURCH STREET, NEW YORK
BRANCH OFFICES—CHICAGO, ST. LOUIS, ST. PAUL, RICHMOND, DENVER,
SAN FRANCISCO, DALLAS, PITTSBURGH, DETROIT

USED (Service-tested) A. R. A. FREIGHT CAR PARTS

Answering the four questions of chief importance:

QUALITY—Safe as Unused Parts if not actually Safer

QUANTITY-----Substantial Volumes

CONDITION—No more trouble using than Unused Parts

SAVING-----Very Satisfying

Are you receiving our Stock Lists? Write for them and our
interesting proposition.

BRIGGS & TURIVAS, Inc.

Cars (Retired and Second-Hand) and CAR PARTS
of All Kinds

Pittsburgh District Address: Imperial, Pa.

Phone: Imperial 132

General Office: Blue Island (Chicago) Illinois.
Plants: Blue Island, Ill. Chicago Heights, Ill. Pittsburgh, Pa.

Roller Bearings Without Complications

By mounting the roller bearing within the hub of the wheel the American Steel Foundries Roller Bearing Unit greatly simplifies maintenance work.

Handle it as you would any wheel and axle assembly. No adjustments are needed. Just roll it into place.

AMERICAN STEEL FOUNDRIES

New York

CHICAGO

St. Louis

YOUNGSTOWN

ALL STEEL CORRUGATED FREIGHT CAR DOORS

CAMEL

FREIGHT CAR DOOR FIXTURES

Weather and Burglar Proof

Top or Bottom Supported

CAMEL SALES COMPANY

332 South Michigan Avenue

CHICAGO, ILLINOIS

Pressed Steel Car Co.

MANUFACTURERS OF

FREIGHT and PASSENGER

-:- CARS -:-

CASTINGS

FORGINGS

BOLSTERS

BRAKEBEAMS

TRUCKS

UNDERFRAMES

GREY IRON WHEELS

COMPLETE FACILITIES FOR REPAIRING CARS

OFFICES

New York

Pittsburgh

Chicago

St. Paul

Standard Steel Car Co.

OFFICES

General Offices: Frick Bldg., PITTSBURGH, PA.
NEW YORK, 170 Broadway
CHICAGO: Fisher Building

WORKS

Butler, Pa.
New Castle, Pa.
Hammond, Ind.

STEEL AND COMPOSITE

FREIGHT CARS

For all Classes of Service, from our Standard Designs,
or according to Specifications of Purchasers.

Steel Car Underframes

TRUCKS, BOLSTERS, BRAKE BEAMS, ETC.

Capacity 50,000 Cars per Annum INQUIRIES
SOLICITED

Union Steel Casting Company

Pittsburgh, Pa.

Cast Steel Locomotive Frames, Driving Wheel
Centers, Locomotive Steel Cylinders and
Miscellaneous Steel Castings

Vanadium, Nickel and other Alloy Steel Castings a
Specialty

CAR HEATING SPECIALTIES

Use "VAPOR"

Metallic Two-inch Steam Con-
nections between all Cars.

Automatic Temperature Control
Vapor System on all Cars.

VAPOR CAR HEATING CO., Inc.

Railway Exchange - Chicago, Ill.

GENERAL REFRACTORIES COMPANY

Home Office
PHILADELPHIA, PA.

Manufacturers of High Grade Fire Brick
For All Railroad Purposes

Locomotive Arch Brick
Direct from Manufacturer to Consumer

Consignment Stocks, Prompt Deliveries
Quality and Service Assured

RAILWAY SALES DEPARTMENT

Graybar Building—420 Lexington Avenue
New York City



H. & K.
Rotating Chair
No. 90.

CHAIR CAR COMFORT IN DAY COACHES

These Luxurious Chairs

—bring to a focus the steady improvement made in Hale & Kilburn car seats during the last half century. The tendency in this development has been constantly towards greater comfort, larger and more commodious seats, softer springs and greater beauty.

Hale & Kilburn Company

General Offices and Works:

1800 Lehigh Ave., Philadelphia

NATHAN

MECHANICAL LUBRICATORS

WATER COLUMNS INJECTORS LUBRICATORS
LOW WATER ALARMS

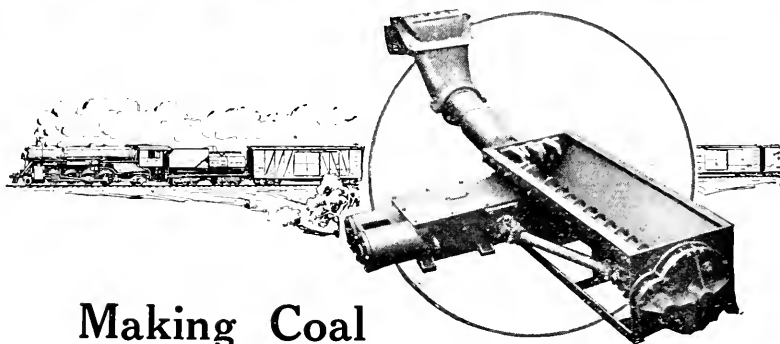
Locomotive and Stationary Boiler Fittings

NATHAN MANUFACTURING CO., 250 Park Avenue, New York

*Pacific Electric Railway
Main Street Terminal
Los Angeles*

KERITE

THE KERITE INSULATED WIRE & CABLE COMPANY INC.
NEW YORK CHICAGO SAN FRANCISCO



Making Coal Produce More

BY compelling the boiler to develop its full capacity, stoker firing increases locomotive output — locomotive ton-mile-per-hour capacity.

Big modern power is almost universally stoker fired. Stoker firing of existing

power is just as advisable— and just as economical.

Simplex Type "B-K" Stokers are readily applicable to any existing locomotive. They mean greater steaming capacity — greater effectiveness — greater earning capacity.

THE STANDARD STOKER COMPANY, Inc.

New York

Erie

Pittsburgh

VULCAN

CRUCIBLE STEEL COMPANY

Established in 1900

ALIQUIPPA, PA.

*Makers of the better grades of Tool Steel, and the
pioneers in the manufacture of high quality
Vanadium Steels.*

KING

METALLIC

for Locomotive Piston
Rods, Valve Stems and
Air Pumps.



PACKINGS

King Sander
Security Latch
King Indestructible Oil Cups
King Hand Boring Lathe
Gollmar Bell Ringer
Leach Sanders

Reg. U. S. Pat. Off.

THE U. S. METALLIC PACKING CO.

PHILADELPHIA, PA.

23 Useful Years

NEW developments are often interesting, but more important are the results of proven experience. Men in important positions, of great responsibilities, demand facts proven by experience.

The fact that the Grip Nut Company is now twenty-three years old, that twenty-three years ago they made the first Grip Nut and that they have continued their work of development and progress is proof of the merit of their product. The fact that certain railroads have used the Grip Nut Company's products for a continuous period of 18 years is "proven experience."

Further, the fact that certain railroads whose Bad Order Equipment is less than 2%, continue to use Grip Nuts as common standard, is proof of the recognition of their merit by men in responsible positions.

5917
So. Western Ave.

Grip Nut Company

Chicago
Illinois

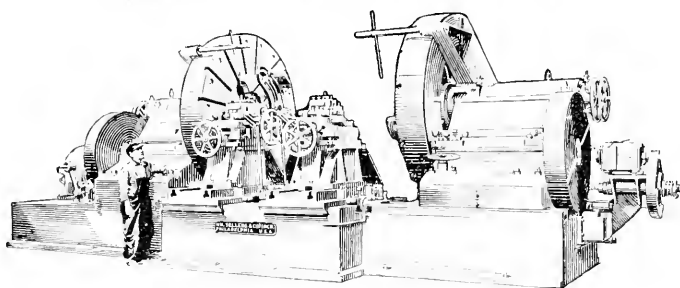
TUCO PRODUCTS CORPORATION

Tuco National Standard Roofing
Tucolith Composition Flooring
Flexolith Composition Flooring
Imperial Car Window Screens
Royal Adjustable Car Window Screens
Universal Car Window Screens
National Standard Steel Trap Doors
Universal Steel Trap Doors
Trap Door Locks and Holders

30 CHURCH STREET
NEW YORK

Resisto Hairfelt Insulation
Tuco Rockwul-Jacket Insulation
Tucork Insulation for Car Floors
Tuco Floor Plate Preservative
Eclipse Deck Sash Ratchets
Steel Car Sheathing, Panels and Slats
Reliance Sash Balances
Perfection Sash Balances
Brown Window Sash Weatherstrips

PEOPLES GAS BUILDING
CHICAGO



Railroad Shop Tools

Driving Wheel Lathes

Car Wheel Lathes

Axle Lathes

Driving Box Boring and Facing Mills

Car Wheel Boring Mills

Boring and Turning Mills

Tool Grinders

Drill Grinders

WM. SELLERS & CO., Incorporated

PHILADELPHIA, U. S. A.

SELLERS

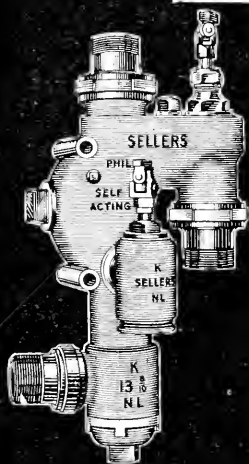
*Class K, N-L Injector
for Hot Water*

The most satisfactory form of non-lifting injector. Widest range of capacities; restarts automatically and is self-adjusting. Can use hotter water than any other type of non-lifting injector and materially lessens the formation of scale in the boiler.

Circular on application

WM. SELLERS & CO.
Incorporated
Injector Dept.

PHILADELPHIA, U. S. A.



BOILER COMPOUNDS

SOOT REMOVER



Buckeye Chemical Co.

Factory and Laboratory:

DETROIT, MICH.

Pittsburgh, Pa.
5621 Wellesley Ave.
Montrose 1362

Rochester, N. Y.
82 St. Paul St.
Main 3084

Over Thirty Years Serving the Engineer

Donated by A Friend

for welding and cutting

in the railroad shops of Pittsburgh
district and thruout the country —
Airco Oxygen—Airco Acetylene—Airco-
Davis-Bournonville Welding and Cut-
ting Apparatus—Supplies.

AIR REDUCTION SALES CO.

Pittsburgh—1116 Ridge Avenue

New York—342 Madison Avenue

OKONITE (RUBBER) and VARNISHED CAMBRIC

INSULATED WIRES and CABLES

MANSON TAPE

OKONITE TAPE

THE OKONITE COMPANY

THE OKONITE-CALLENDER CABLE COMPANY, Inc.

Factories: Passaic, N. J. - Paterson, N. J.

Sales Offices: New York - Chicago - Pittsburgh - St. Louis
Atlanta-Birmingham - San Francisco - Los Angeles - Seattle



SUPERHEATERS

DESIGNING ENGINEERS AND MANUFACTURERS
OF ELESKO STEAM SUPERHEATERS FOR
LOCOMOTIVE, MARINE AND STATIONARY
BOILERS



FEED WATER HEATERS, EXHAUST
STEAM INJECTORS AND PYROMETERS
FOR LOCOMOTIVES

37 East 42nd Street
NEW YORK

THE SUPERHEATER COMPANY

Peoples Gas Building

OFFICIAL PROCEEDINGS

RAILWAY CLUB OF PITTSBURGH

\$1.00 Per Year

25¢ Per Copy

Vol. XXIX

DECEMBER 19, 1929.

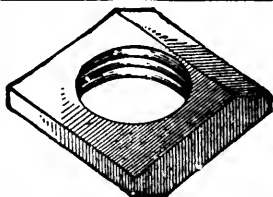
No. 2.

THE ROMANCE OF THE RAILS

By W. R. COX, Freight Traffic Manager, The Pennsylvania
Railroad, Pittsburgh, Pa.

Steel Car Forge Company PITTSBURGH, PENNSYLVANIA

FORGINGS



Dieter Lock and Holding Nuts

STANDARD SAFETY NUT
CORPORATION

30 CHURCH ST.

NEW YORK

LOX-ON DEVICES CORPORATION

PAUL W. DIETER, President

30 CHURCH STREET

NEW YORK CITY

LEWIS IRON, "The Iron Superior"

Penn Iron & Steel Company, Creighton, Pa.

SOLE SALES AGENTS,

Joseph T. Ryerson & Son, Inc., Chicago, Ill.

HAGAN FURNACES



*have Proven very successful
in every phase of Railroad usage.*

George J. Hagan Company

Chamber of Commerce Building.
Pittsburgh Penna.

Starrett



**The Stadlard
For Accuracy**



**Cut Quicker
Last Longer**



**Accurate
Reliable**

THE L. S. STARRETT CO., ATHOL, MASS., U. S. A.

SINCE 1900

For almost thirty years, Johnson Bronze has successfully served the railroads of this section with high quality products and prompt deliveries.

Whether the order calls for car brasses, engine brasses, general steam castings, miscellaneous bronze bushings or cored and solid bar bronze, you can be sure it will be handled with dispatch and that the product delivered will be up to specification in every detail.

Write for Catalog

JOHNSON  BRONZIE
BUSHINGS BEARINGS BAR BRONZE

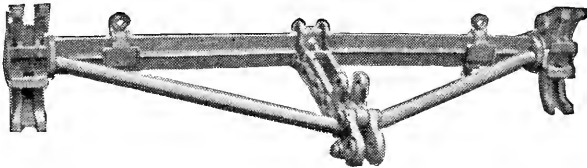
New Castle, Pa.

BRAKE BEAMS

"Solid Truss"
and
Built-Up Types

AND

Brake Beam Supports



DAVIS "SOLID TRUSS" PASSENGER BEAM

ALSO

Pressed Steel Journal Box Lids

DAVIS BRAKE BEAM CO.

JOHNSTOWN, PA.

Sales Office: 418 Sixth Avenue, Pittsburgh, Pa.

GOULD

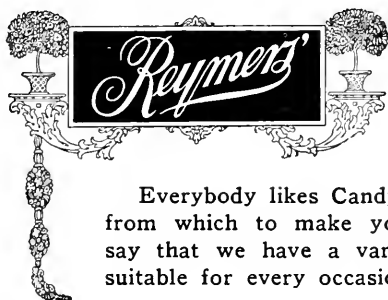
Side Frames Bolsters Couplers
 Passenger and Freight Journal Boxes
 Open Hearth Steel Castings

THE GOULD COUPLER CO.

New York

Works: Depew

Chicago



CANDIES

Everybody likes Candy—with almost a thousand candies from which to make your selection, we can truthfully say that we have a variety to suit every taste—a box suitable for every occasion.

Lacquers
 Varnish
 Enamels
 Oil Colors



REG U S PAT OFF.

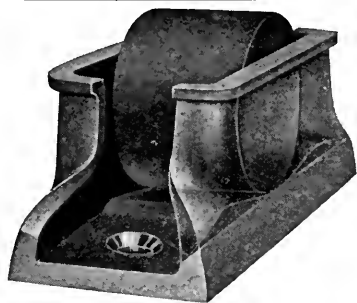
Railway and
 Industrial
 Protective
 Coatings

JAMES B. SIPE AND COMPANY
 PITTSBURGH, U. S. A.

The Q & C Company, 90 West St., N. Y. C.

Peoples Gas Building - Chicago
 Railway Exchange Building - St. Louis

**Manufacturers of Track, Car and Engine
 Specialties**



STUCKI Side Bearings

A. STUCKI COMPANY
OLIVER BUILDING
PITTSBURGH, PA.

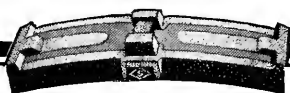
SOUTHERN WHEEL COMPANY

A. R. A. 850 LB.

SINGLE PLATE CHILLED TREAD WHEELS

FOR

70 TON CARS



*Our tests determine the best
shoe for each type of service.*

The American Brake Shoe and Foundry Company

230 Park Ave., New York

332 S. Mich. Ave., Chicago

**The Pocket List of
Railroad Officials**

*Used by the Officers of all Railroads on
The North American Continent*

Issued Quarterly

Subscription Price, \$6.00 per annum

Single Copies, \$2.50

Advertising rates on application

THE OFFICIAL RAILWAY EQUIPMENT REGISTER
ISSUED MONTHLY

Descriptive of freight and passenger cars of the Railways and
Private Car Companies in the United States, Canada and Mexico.

Subscription Price, \$15.00 per annum.

Single Copies, \$2.00.

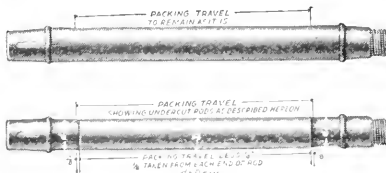
THE RAILWAY EQUIPMENT AND PUBLICATION CO.

J. ALEXANDER BROWN, Vice-President and Manager

424 West 33rd Street

New York

IF WE stated we could sell you the same steel you are now using for your piston rods at half the price you are paying, you would be greatly interested. Well, we can practically do that and make an additional saving of half the cost of labor required in preparing the rod for the engine by undercutting, as illustrated in cut below, instead of grinding or turning the wearing surface. That practice will extend the life of the rod fifty per cent or more. Paxton-Mitchell Metallic Packing will pack its own wear steam-tight until a rod has been reduced one-quarter of an inch. You will also save the cost of one set of packing, one sliding plate and one cone each time engine is in for general repairs.



Half sets of our packing segments may be reclaimed from scrap for use in making at least fifty per cent of renewals due to the four segment combination of our packing.

"The Packing That Packs"

The Paxton-Mitchell Company
OMAHA, NEBRASKA

NATIONAL FRICTION DRAFT GEAR

The Perfect Shock Absorber

Requires No Re-Adjustment

NATIONAL MALLEABLE AND STEEL CASTINGS CO.

General Office — Cleveland, O.

SUCCESSFUL WATER TREATMENT

Corrosion, foaming, scaling and embrittling tendencies are completely eliminated with the proper Dearborn treatment to overcome the trouble, supplied after analysis of the water in Dearborn laboratories.

DEARBORN CHEMICAL COMPANY

310 S. Michigan Avenue, Chicago 205 East 42nd Street, New York
Farmers Bank Bldg., Pittsburgh



SYMINGTON

Malleable Iron and Steel Journal Boxes
for Passenger and Freight Equipment

FARLOW DRAFT ATTACHMENTS

THE SYMINGTON COMPANY

New York Chicago Boston Baltimore Rochester

BALL'S
Varnish Remover

OXOLIN
REGISTERED
THE IDEAL PAINT OIL

B. C.
Spirits

Ball Chemical Company

CHICAGO Office,
63 W. Van Buren Street.

Fulton Bldg., PITTSBURGH, PA.

Schaefer Drop-Forged Brake Levers



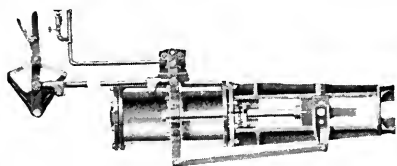
Designed to give uniform stress conditions throughout entire body of lever. Levers are drilled from templates and exact spacing between holes is thus assured.

Drop forging makes all levers uniform.

Lighter in weight with increased strength.

Schaefer Equipment Co.

General Offices: Koppers Bldg., Pittsburgh, Pa.



ALCO REVERSE GEAR

THE Alco Reverse Gear was designed to meet the demands of diversified service. While it serves acceptably in heavy freight service, it responds equally well to the needs of high speed passenger requirements. Again, in fast freight, helper and switching service it gives quick and accurate valve gear adjustments. In other words, it meets the conditions imposed in all classes of service—it does not excel in one at the expense of another.

AMERICAN LOCOMOTIVE COMPANY
30 CHURCH STREET NEW YORK CITY

... NILES-BEMENT-POND ... MACHINE TOOLS

For Locomotive, Car and Railroad Repair Shops

Also complete machine tool equipment for general machine shops as well as electric traveling cranes, trolleys and hoists, jib and wall cranes and steam hammers.

Pratt & Whitney

Machine Tools, Small Tools and a complete equipment of M. C. B. Gages can also be furnished.

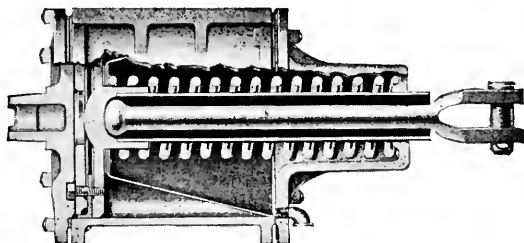
Write for Catalogs.

Niles-Bement-Pond Co. 111 Broadway, New York

Divisions of NILES-BEMENT-POND COMPANY

The Niles Tool Works Company, *Hamilton, Ohio*
Ridgway Machine Company, *Ridgway, Pa.*
Pratt and Whitney Company, *Hartford, Conn.*
Niles Crane Corporation, *Philadelphia, Pa.*

Niles Gear Company
111 Broadway, *New York*
Pittsburgh Office
Empire Building



This New Protector Keeps Cylinders Clean

A collapsible water-proof hood that prevents moisture and dirt from reaching the cylinder walls. Lengthens life of packing cups, reduces leakage, decreases maintenance cost. . . Ask for Circular Notice 1082.

Westinghouse Air Brake Co., Wilmerding, Pa.

Positive Dependability

with

Westinghouse Electrical Equipment

for

Railway Signaling Service



Westinghouse Electric & Mfg. Co.
Pittsburgh, Pennsylvania

Ton-Miles Per Hour

A locomotive is a manufacturing plant, and its product is measured in ton-miles per hour—which is equivalent to the weight of the train hauled multiplied by the speed at which it is moved.

We recently built locomotives of large ton-mile per hour capacity for several important railroads, and are ready to co-operate with any railroad desirous of improving its motive power.

The Baldwin Locomotive Works

Philadelphia

STANDARD STEEL PRODUCES

Steel Axles
Steel Tires



Steel Springs
Steel Billets

Rolled Steel Wheels
Steel Tired Wheels
Wrought Solid Steel Wheels
Carbon and Alloy Steel Forgings

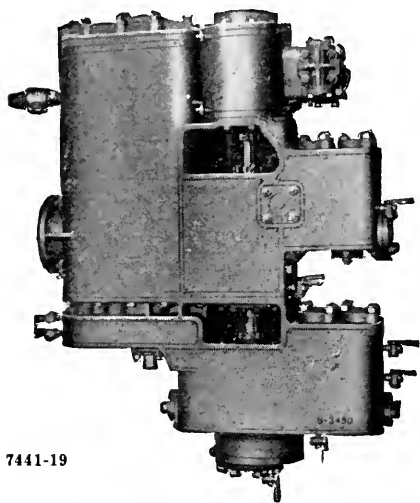
STANDARD STEEL WORKS COMPAN
PHILADELPHIA, PA.

Branch Offices:

CHICAGO NEW YORK PORTLAND SAN FRANCISCO
ST. LOUIS RICHMOND MEXICO CITY

WORKS: BURNHAM, P.A.

THE WORTHINGTON OPEN-TYPE FEED-WATER HEATER FOR LOCOMOTIVES



7441-19

1. Saves 12 per cent total fuel per year.
2. Saves 14 per cent total water per year.
3. Increases boiler capacity 10 to 13 per cent.
4. Increases drawbar pull at speed.
5. Reduces stops for water and coal.
6. Removes 80 per cent corrosive oxygen from feed-water.
7. Lessens amount of scale and purifies water.
8. Extends life of old engines by increasing steaming capacity and reducing fuel consumption.

WORTHINGTON



Literature, further describing these advantages, gladly sent upon request.

WORTHINGTON PUMP AND MACHINERY CORPORATION

Railway Department

Worthington Works: Harrison, New Jersey

District Offices in 24 Cities

*Factors that Increase
Locomotive Effectiveness*



The Locomotive
BOOSTER

Franklin Railway Supply Co., Inc.

17 East Forty-Second Street, New York

Chicago, Ill.

St. Louis, Mo.

San Francisco, Cal.

332 S. Michigan Ave.

Boatmen's Bank Bldg.

774 Monadnock Bldg.

Franklin Railway Supply Company, Limited, Montreal

Export Department - International Railway Supply Co.

30 Church Street, New York

STAYBOLTS FOR ANY BOILER REQUIREMENT

F. B. C. Welded, TATE Threaded,
and Flannery Two-Piece
Flexible Staybolt Assemblages

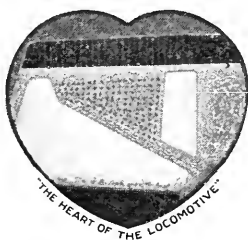
NU-TATE and TELL-TALE Bolts

Crown Stays and Rigid Bolts
(STRAIGHT OR REDUCED BODIES)
Bulletins Describing all Flannery
products mailed upon request.

FLANNERY BOLT CO.

FLANNERY BLDG.

PITTSBURGH, PA.



Nicholson Thermic SYPHONS

Many repeat orders have been placed
in 1929 for locomotives which have es-
tablished records of outstanding per-
formance and efficiency.

SYPHON-EQUIPPED, OF COURSE.

LOCOMOTIVE FIREBOX CO.,
310 S. Michigan Ave., Chicago, Ill.

Hunt-Spiller Air Furnace Gun Iron

HAS THE
Strength and Wearing Qualities
THAT ARE ABSOLUTELY NECESSARY IN
LOCOMOTIVE CASTINGS

PRICES MODERATE

Manufactured Only By

RESULTS GREAT

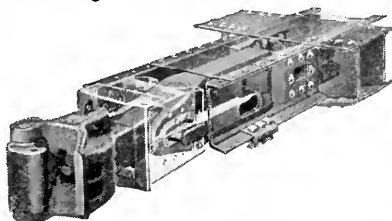
Hunt-Spiller Manfg. Corporation

J. G. PLATT, President and General Manager
OFFICE AND WORKS:
383 DORCHESTER AVENUE
SO. BOSTON, MASS.

V. W. ELLET.
Vice President

The Buckeye Steel Castings Co.

COLUMBUS
NEW YORK
CHICAGO



ST. PAUL
LOUISVILLE
LONDON

“BUCKEYE” Yoke and Draft Attachments

FORT PITT SPRING COMPANY

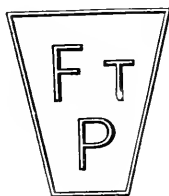
PITTSBURGH, PA.

SPRINGS BOTH COIL
& ELLIPTIC

For Railroad Service

ALLOY SPRINGS A SPECIALTY

Malleable CASTINGS OF UNIFORM QUALITY ARE PERMANENT



AVERAGE TESTS

for 15 months

1104 Consecutive Heats

Tensile Strength, Yield Point Elong. %

Lbs. per sq. in. Lbs. per sq. in. in 2 in.

HIGH	60952	39639	27.5
LOW	56550	37679	23.9

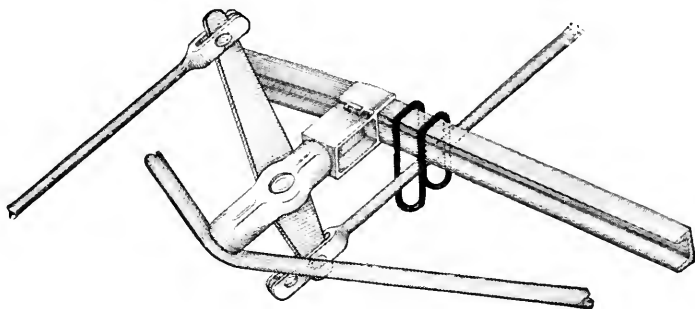
*This Trade-mark is your security on
Railroad Car Castings*

Send Blue Prints for Estimates

Fort Pitt Malleable Iron Company
PITTSBURGH, PA.

INDEX—ADVERTISERS.

NAME	Page	NAME	Page
Air Reduction Sales Co.....	xxiv	Penn Iron & Steel Co.....	Front Cover
American Brake Shoe & Foundry Co.....	iii	The Pocket List of Railroad Officials	iii
American Locomotive Co.....	vi	Pressed Steel Car Co.....	xviii
American Steel Foundries.....	xviii	The Q & C Co.....	ii
Baldwin Locomotive Works....	viii	Railway Equip't. and Publication Company	iii
Ball Chemical Co.....	v	Railway Steel Spring Co.....	xvii
Briggs & Turivas.....	xvii	Reymer & Bros., Inc.....	ii
Buckeye Chemical Co.....	xxiv	Safety Car Heat. & Lighting Co...	xvii
The Buckeye Steel Casting Co.	xi	Schaefer Equipment Co.....	v
Camel Sales Co.....	xviii	Wm. Sellers & Co., Inc.....	xxiii
Chicago Railway Equip. Co.....	xiii	Sipe, James B., & Co.....	ii
Davis Brake Beam Co.....	i	Southern Wheel Co.....	iii
Dearborn Chemical Co.....	iv	Standard Safety Nut Corp. Front	Cover
Flannery Bolt Co.....	x	Standard Steel Car Co.....	xix
Fort Pitt Malleable Iron Co.....	xi	Standard Steel Works Co.....	viii
Fort Pitt Spring Co.....	xi	The Standard Stoker Co.....	xxi
Franklin Rwy. Supply Co., Inc.	ix	The L. S. Starrett Co.....	Inside Front Cover
General Refractories Co.....	xx	Steel Car Forge Co.....	Front Cover
The Gould Coupler Co.....	ii	Stucki Co., A.....	iii
Grip Nut Co.....	xxii	The Superheater Co.....	Front Cover
Hagan, George J. Company	Inside Front Cover	The Symington Co.....	v
Hale & Kilburn Co.....	xx	Tuco Products Corp.....	xxii
Hunt-Spiller Mfg. Corporation	x	Union Spring & Mfg. Co.....	xiv
Johnson Bronze Co.....	i	Union Steel Casting Co.....	xix
The Kerite Insulated Wire & Cable Co., Inc.....	xxi	U. S. Metallic Packing Co.....	xxii
Locomotive Firebox Co.....	x	Vapor Car Heating Co., Inc.....	xix
Lox-On Devices Corp.....	Front Cover	Vulcan Crucible Steel Co.....	xxii
Nathan Mfg. Co.....	xx	Westinghouse Air Brake Co.....	vii
National Malleable and Steel Castings Co.	iv	Westinghouse Elec. & Mfg. Co.	vii
Niles-Bement-Pond Co.....	vi	Worthington Pump and Machinery Corporation	ix
The Okonite-Callender Cable Company	Front Cover		
Paxton-Mitchell Co.....	iv		



LOW COST PROTECTION

Afforded By the

CRECO BOTTOM ROD GUARD

Simply drive it on the brake beam.
It locks in place and cannot rattle.
Positively prevents fallen bottom rods.
Low in price and application cost.

Chicago Railway Equipment Co.

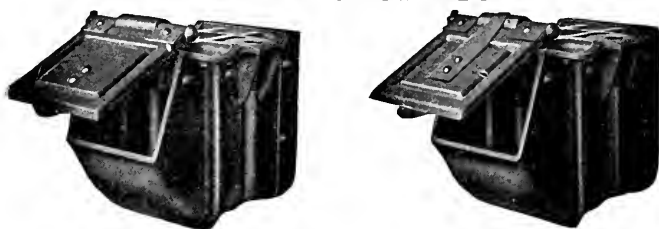
CHICAGO

Union Spring & Manufacturing Co.

RAILROAD SPRINGS

Kensington All Steel Journal Boxes

STEEL CASTINGS



Lightest and Strongest M. C. B.
Journal Boxes Made

WORKS:
NEW KENSINGTON, PA.

PITTSBURGH OFFICE
2001 CLARK BUILDING

NEW YORK	-	-	-	50 Church Street
CHICAGO	-	-	-	Fisher Building
RICHMOND, VA.	-	-	-	Mutual Building
LOUISVILLE, KY.	-	-	-	Equitable Life & Cas. Bldg.
BALTIMORE, MD.	-	-	-	Munsey Building
PHILADELPHIA, PA.	-	-	-	226 South 15th Street

The Railway Club of Pittsburgh

Organized October 18, 1901

Published monthly, except June, July and August, by The Railway Club of Pittsburgh, J. D. Conway, Secretary, 515 Grandview Ave., Pittsburgh, Pa.
Entered as Second Class Matter February 6, 1915, at the Postoffice at Pittsburgh, under the Act of March 3, 1879.

Vol. XXIX
No. 2.

Pittsburgh, Pa., Dec. 19, 1929

\$1.00 Per Year
25c Per Copy

OFFICERS FOR 1929-1930

President
E. W. SMITH,
Vice President, The Pennsylvania Railroad,
Pittsburgh, Pa.

First Vice President
PROF. LOUIS E. ENDSLEY,
Consulting Engineer,
Pittsburgh, Pa.

Second Vice President
J. E. HUGHES,
Superintendent, P. & L. E. R. R.,
Pittsburgh, Pa.

Secretary
J. D. CONWAY,
1841 Oliver Building, Pittsburgh, Pa.

Treasurer
E. J. SEARLES,
Manager, Schaefer Equipment Company,
Pittsburgh, Pa.

Executive Committee

FRANK J. LANAHAN, Pres., Fort Pitt Malleable Iron Co., P. O. Box 1054, Pgh., Pa.
A. STUCKI, Engineer, A. Stucki Company, 419 Oliver Bldg., Pittsburgh, Pa.
SAMUEL LYNN, Supt., Rolling Stock, P. & L. E. R. R., McKees Rocks, Pa.
D. F. CRAWFORD, Consulting Engineer, 5243 Ellsworth Avenue, Pittsburgh, Pa.
F. G. MINNICK, General Manager, P. & L. E. R. R., Pittsburgh, Pa.
G. W. WILDIN, Asst. Vice President, Westinghouse Air Brake Co., Wilmerding, Pa.
E. J. DEVANS, General Superintendent, B. R. & P. Ry. Co., Du Bois, Pa.
W. S. McABEE, Vice President, Union Railroad Co., East Pittsburgh, Pa.

Membership Committee

E. A. RAUSCHART, Mechanical Superintendent, Montour Railroad, Coraopolis, Pa.
OTIS R. HALE, Dis. Sales Mgr., American Loco. Co., Farmers Bank Bldg., Pgh., Pa.
T. E. CANNON, Gen. Supt., Locos. & Equipment, P. & W. Va. Ry., Pittsburgh, Pa.
GUY M. GRAY, Superintendent Motive Power, B. & L. E. R. R., Greenville, Pa.
C. E. PEIFFER, Master Car Builder, B. R. & P. Ry., Du Bois, Pa.
J. S. LANAHAN, Vice President, Fort Pitt Malleable Iron Co., Pittsburgh, Pa.
E. EMERY, Railway Supplies, 304 Oliver Building, Pittsburgh, Pa.
R. M. LONG, Air Brake Inspector & Instructor, P. & L. E. R. R., McKees Rocks, Pa.
DONALD O. MOORE, Mgr. of Traffic Division, Chamber of Commerce, Pittsburgh, Pa.
J. A. RALSTON, Mechanical Engineer, Union Railroad, Frick Bldg. Annex, Pgh., Pa.

Subject Committee

C. O. DAMBACH, Supt., P. & W. Va. Ry. Co., Wabash Bldg., Pittsburgh, Pa.
KARL BERG, Asst. Supt., Motive Power, P. & L. E. R. R., McKees Rocks, Pa.
S. G. DOWN, Vice President, Westinghouse Air Brake Company, Wilmerding, Pa.

Finance Committee

W. C. HANSEN, Sales Engineer, A. Stucki Co., 419 Oliver Bldg., Pittsburgh, Pa.
T. M. BLAKLEY, R. F. of E., Pennsylvania R. R., 101 Emerson Ave., Aspinwall, Pa.
J. H. CARROLL, JR., Freight Traffic Mgr., B. & O. R. R., 821 Oliver Bldg., Pgh., Pa.
W. P. CUNNINGHAM, Supt. Motive Power, Monongahela Ry., 3169 Ashlyn St., Pgh., Pa.
LLOYD SUTHERLAND, General Storekeeper, P. & L. E. R. R., McKees Rocks, Pa.

Entertainment Committee

CHARLES ORCHARD, Special Agent, Traffic Dept., Carnegie Steel Co., Pgh., Pa.
F. M. BROWN, Supt., P. & L. E. R. R., Pittsburgh, Pa.
ROBERT ROGERS, Sales Agent, American Car & Foundry Company, Pittsburgh, Pa.

Reception Committee

O. L. WRIGHT, District Manager, The Duff-Norton Mfg. Co., Pittsburgh, Pa.
CHARLES J. NIEMAN, Secretary & Treasurer, Penn Iron & Steel Co., Creighton, Pa.
GEORGE F. LAURENT, Sales Engineer, Fort Pitt Malleable Iron Co., Pgh., Pa.
A. B. WHITE, Superintendent, B. R. & P. Ry. Co., Punxsutawney, Pa.
F. I. SNYDER, Vice President and General Mgr., B. & L. E. R. R., Pittsburgh, Pa.
COL. H. C. NUTT, Pres. & Gen. Mgr., Monongahela Railway Co., Pittsburgh, Pa.

Past Presidents

*J. H. McCONNELL	October, 1901, to October, 1903
*L. H. TURNER	November, 1903, to October, 1905
F. H. STARK	November, 1905, to October, 1907
*H. W. WATTS	November, 1907, to April, 1908
*D. J. REDDING	November, 1908, to October, 1910
*F. R. McFEATHERS	November, 1910, to October, 1912
A. G. MITCHELL	November, 1912, to October, 1914
*F. M. McNULTY	November, 1914, to October, 1916
J. G. CODE	November, 1916, to October, 1917
*D. M. HOWE	November, 1917, to October, 1918
*J. A. SPIELMANN	November, 1918, to October, 1919
H. H. MAXFIELD	November, 1919, to October, 1920
FRANK J. LANAHAN	November, 1920, to October, 1921
SAMUEL LYNN	November, 1921, to October, 1922
D. F. CRAWFORD	November, 1922, to October, 1923
GEO. D. OGDEN	November, 1923, to October, 1924
A. STUCKI	November, 1924, to October, 1925
F. G. MINNICK	November, 1925, to October, 1926
G. W. WILDIN	November, 1926, to October, 1927
E. J. DEVANS	November, 1927, to October, 1928
W. S. McABEE	November, 1928, to October, 1929

*—Deceased.

Meetings held fourth Thursday of each month except June, July and August.

PROCEEDINGS OF MEETING

DECEMBER 19, 1929

The meeting was called to order at the Fort Pitt Hotel at 8:00 o'clock P. M., with President E. W. Smith in the chair.

The following gentlemen registered:

MEMBERS

Altsman, W. H.	Flinn, R. H.
Baker, J. B.	Fults, J. H.
Beam, E. J.	Goda, P. H.
Beck, C. H.	Goodman, O. F.
Blakley, T. M.	Greene, W. F.
Blumling, Howard J.	Haller, Jacob
Boylan, P. F.	Haller, Nelson M.
Buffington, W. P.	Harper, G. C.
Byrne, W. L.	Hollis, H. E.
Byrom, W. Reed	Holmes, E. H.
Campbell, J. T.	Hoover, J. W.
Cannon, T. E.	Hussong, Albert C.
Canterbury, L. E.	Hykes, W. H.
Carlson, L. E.	Jones, William J.
Carter, William	Kaupe, Earle W.
Chilcoat, H. E.	Kelly, L. J.
Christy, F. X.	Ketchpel, Paul A.
Conway, J. D.	Klann, P. B.
Corcoran, James	Kondej, H.
Cotter, G. L.	Kroske, J. F.
Courtney, H.	Kummer, Joseph H.
Craig, John R.	Landis, William C.
Crawford, D. F.	Laurent, Joseph A.
Croke, Thomas F.	Lobez, P. L.
Cunningham, R. I.	Loeffler, George O.
Dambach, C. O.	Long, Walter
Darrall, William G.	Lowman, John R.
Davis, Charles S.	Lowry, William F., Jr.
Descamp, J.	Lynch, B. J.
Diven, J. B.	Mertz, G. H.
Eagan, D. F.	Meyers, William F.
Edwards, C. H.	Millar, C. W.
Ellis, D. S.	Miller, J.
Emery, E.	Mitchell, F. K.
En Dean, J. F.	Mitchell, W. S.
Endsley, Prof. Louis E.	Moir, W. B.
Emsheimer, Louis	More, Donald O.
Falkner, A. J.	Morgan, A. L.
Fenton, H. H.	Muck, Joseph

McHugh, C. A.	Schneider, George
McIntyre, R. C.	Schrecongost, C. P.
McNeely, A. P.	Seiss, W. C.
Nagel, James	Seroky, Edward A.
Nash, R. L.	Severn, A. B.
Orchard, Charles	Shafer, John S.
O'Sullivan, John J.	Shannon, David E.
O'Toole, Thomas J.	Shellenbarger, H. M.
Painter, Joseph	Shelly, D. L.
Paisley, F. R.	Sixsmith, G. M.
Pickard, S. B.	Smith, E. W.
Posteraro, S. F.	Stevens, L. V.
Pringle, P. V.	Stoffregen, Louis E.
Rauschart, E. A.	Sutherland, L.
Read, A. A.	Swartz, Edward
Reardon, J. P.	Tucker, J. L.
Reeve, George	Van Wormer, G. M.
Rogers, Robert	Vollmer, Karl L.
Sattley, E. C.	Waldron, F. G.
Schmitt, Raymond F.	Wheatley, William
	Wright, J. B.

VISITORS

Bain, C. A.	Muir, R. Y.
Bishop, E. M.	McCrea, J. G.
Black, F. J.	Nyquist, A.
Carmack, John L.	Oschman, William
Davis, D.	Pidgeon, B. J.
Davis, William B.	Ramsey, J. P.
Dunham, C. W.	Raum, Fred L.
Fair, H. E.	Roscoe, Joseph
Gray, H. H.	Severn, Harry
Hussong, Albert M.	Shaw, John
Irwin, J. J.	Smith, E. S.
Jackson, C. R.	Smith, Sion B.
Jackson, W. M.	Spoor, C. E.
Kyce, T. C.	Sullivan, W. P.
Lewis, S. B.	Underwood, J. Q.
Long, Walter F.	Vanhoy, A. C.
Miller, R. H.	Walker, R. L.
Mitchell, Paul S.	Wilson, H. T.
Mitchell, William J.	Wilson, Joseph B.

PRESIDENT: As we have a record of attendance on the registration cards, we will dispense with the call of the roll. With your permission we will also dispense with the reading of the minutes, as they have already appeared in print.

The next order is the reading of the list of applications for membership.

SECRETARY: We have the following proposals for membership:

- Bain, C. A., Inspector, Pressed Steel Car Company, 801 Eighth Street, West Park, McKees Rocks, Pa. Recommended by G. M. Van Wormer.
- Blumling, H. J., Fitter, Pressed Steel Car Company, 510 Russellwood Avenue, West Park, McKees Rocks, Pa. Recommended by G. M. Van Wormer.
- Boylan, P. F., Expediter, Pressed Steel Car Company, 1314 Orchlee Street, N. S., Pittsburgh, Pa. Recommended by G. M. Van Wormer.
- Carmack, John L., Crane & Shovel Foreman, Union Railroad, 111 Comrie Avenue, Braddock, Pa. Recommended by R. C. McIntyre.
- Comers, John P., Chief Clerk, Tank Car Department, Pressed Steel Car Company, 1025 Chartiers Avenue, McKees Rocks, Pa. Recommended by G. M. Van Wormer.
- Conway, C. E., Salesman, Vulvan Crucible Steel Company, Aliquippa, Pa. Recommended by E. A. Rauschart.
- Covert, G. W. Jr., Safety Inspector, Montour Railroad, Y. M. C. A., Coraopolis, Pa. Recommended by E. A. Rauschart.
- Crawford, Alvin B., Salesman, Duquesne Steel Foundry, Union Bank Building, Pittsburgh, Pa. Recommended by L. V. Stevens.
- Crockett, John M., Electrician, P. & L. E. R. R., California, Pa. Recommended by J. E. Hughes.
- Di Cola, Oreste, Welder, Pressed Steel Car Company, 74 Harlem Avenue, McKees Rocks, Pa. Recommended by G. M. Van Wormer.
- Doyle, Timothy E., Foreman Painter, Montour Railroad, 1125 First Avenue, Coraopolis, Pa. Recommended by E. A. Rauschart.
- Edgett, Joseph W., Sales Engineer, Walworth Company, 601 Chamber of Commerce Building, Pittsburgh, Pa. Recommended by E. A. Rauschart.
- Egbert, J. A., Vice President, Railway Products Company, First National Bank Building, Pittsburgh, Pa. Recommended by E. A. Rauschart.

- Gaffney, T. H., Roadmaster, Montour Railroad, 1711 State Avenue, Coraopolis, Pa. Recommended by E. A. Rauschart.
- Gray, Harry H., Division Freight Agent, Pennsylvania Railroad, Clark Building, Pittsburgh, Pa. Recommended by G. M. Sixsmith.
- Gur, Frederick W., Salesman, Walworth Company, 104 Lakewood Avenue, West View, Pittsburgh, Pa. Recommended by E. A. Rauschart.
- Jackson, W. M., Asst. R. F. of E., Pennsylvania Railroad, 241 Fourth Street, Aspinwall, Pa. Recommended by G. M. Sixsmith.
- Kain, Harry, Sales Engineer, Walworth Company, 604 Chamber of Commerce Building, Pittsburgh, Pa. Recommended by E. A. Rauschart.
- Kaup, Earle W., Fitter, Pressed Steel Car Company, 525 Marie Avenue, Avalon, Pa. Recommended by G. M. Van Wormer.
- Knott, M. Thomas, Salesman, Motch & Merryweather Machinery Company, Clark Building, Pittsburgh, Pa. Recommended by E. A. Rauschart.
- Miller, R. H., General Freight Agent, Pennsylvania Railroad, Pennsylvania Station, Pittsburgh, Pa. Recommended by G. M. Sixsmith.
- McCrea, James G., Brakeman, Pennsylvania Railroad, 611 Pitt Street, Wilksburg, Pa. Recommended by John S. Shafer.
- Pollock, J. H., Boiler Foreman, Montour Railroad, Fifth Avenue, Coraopolis, Pa. Recommended by E. A. Rauschart.
- Poznanski, Carl L., General Manager's Department, Pressed Steel Car Company, 817 Woodward Avenue, McKees Rocks, Pa. Recommended by G. M. Van Wormer.
- Rush, Benjamin H., Material Supervisor, Montour Railroad, 126 Tecumseh Street, Pittsburgh, Pa. Recommended by E. A. Rauschart.
- Schaffer, A. R., Steel Chaser, Pressed Steel Car Company, 906 Second Street, McKees Rocks, Pa. Recommended by G. M. Van Wormer.
- Shull, George S., President, Safety First Supply Company, Brady Building, Pittsburgh, Pa. Recommended by John S. Shafer.
- Sullivan, Ambrose W., Salesman, Railway Steel-Spring Company, Webster Hall, Pittsburgh, Pa. Recommended by E. A. Rauschart.

Uline, Claude S., C. S. Uline, Tool, Die, Machine Work, 549 Orchard Avenue, Bellevue, Pa. Recommended by L. V. Stevens.

Wittman, Edward A., Locomotive Boiler Inspector, Montour Railroad, 624 Mansfield Avenue, W. E., Pittsburgh, Pa. Recommended by E. A. Rauschart.

PRESIDENT: In accordance with our by-laws these applications will be referred to the Executive Committee, and upon approval by them, the gentlemen will become members without further action. Are there any announcements?

SECRETARY: Since our last meeting we have received information of the death of three of our members, Paul Langbein died July 18, 1929, J. P. Gochnour died December 6, 1929, and J. M. Hansen died December 13, 1929.

PRESIDENT: In accordance with our custom, an appropriate memorial minute will appear in the next issue of the Proceedings.

PRESIDENT: That finishes the routine business, unless some one has something to bring up at this time. If not, we will proceed to the paper of the evening. The Subjects Committee has been very fortunate in securing Mr. Cox, Freight Traffic Manager, Pennsylvania Railroad Company, to talk to us tonight on "The Romance of the Rails." Some of you have heard Mr. Cox talk and know just how well he can handle any subject. I have heard him quite often and I imagine his romancing tonight will be well worth listening to. May I present Mr. W. R. Cox.

THE ROMANCE OF THE RAILS

By W. R. Cox, Freight Traffic Manager, The Pennsylvania Railroad, Pittsburgh, Pa.

MEMBERS OF THE RAILWAY CLUB OF PITTSBURGH AND GUESTS: I deem it a great distinction to be summoned as a speaker before this splendid organization which has for its worthy object the welfare of our railroads and of those associated and dealing with them. While honored, I am also somewhat abashed at my temerity in standing in

this forum, where experts in the railroad world have often stood, and trying to tell you something about an industry wherein you are masters. I will not attempt a technical talk for I doubt my ability to make one, but I would like, with your indulgence, to discuss briefly a phase of railroading that is, I am sure, often felt but seldom mentioned.

To many, railroading may seem to be merely a business in which men, for a wage, produce transportation for persons and goods and sell it to a needy public for a price that will produce a fair return on the capital expenditure. If that were all there is to it, it would be a prosaic undertaking at best. But I for one do not believe it. I am convinced that no legitimate business enterprise can long endure without an actuating spirit. It must have, if you please, faith, courage, stamina, imagination, altruism, and, indeed, a measure of romance. Railroading has them all.

The American Railroads have a wonderful physical property; over 250,000 miles of lines, valued at well over \$23,000,000,000. Their lands, tracks, buildings, cars and engines form a marvelous and costly working plant, but their greatest possession far transcending everything else, is their personnel; their men of high ideals; of loyalty, courage, understanding and perseverance, for they breathe into the inanimate carcass and make it live and act. They are the real motive power.

Our railroads have done many great things, but somewhere behind every great deed has stood some man or men—strong, intelligent and self-reliant. And though their work be often hard and discouraging they attack it with a magnificent spirit that makes their story really dramatic. They exemplify so well those lines:

"Vigor, Vitality, Vim and Punch,
The Courage to act on a sudden hunch,
The Nerve to tackle the hardest thing
With feet that climb and hands that cling
And a heart that never forgets to sing."

It is about these men, collectively, their difficulties and their accomplishments that, with your permission, I will speak this evening.

Back in the very beginning of our Nation, when our ancestors landed at Plymouth Rock, they found towering forests coming down almost to the edge of the sea and hemming them in along its border. What lay in the interior wilderness none

of them knew; what vast possibilities it held for the development of a new and wonderful nation they could only conjecture. But these were hardy adventurers, sprung from the best stock of the old world, and gradually they widened and lengthened the narrow strip of occupied land into the original thirteen colonies which later became the nucleus of another world power. Those colonies also lay along the Atlantic Seaboard chiefly because there then existed no other means of transportation than by water or animal power. However, little by little these courageous pioneers, who recognized physical obstacles merely as things to be overcome, pushed their way farther and farther into the dark regions of the savage; and the westward course of the Empire resumed its way.

Obviously, the rapid and substantial growth of this great, young land required quicker and surer means of transportation and communication than were then in vogue, and in due time and by virtue of man's inventive genius and irresistible tenacity railroads were built. In those early days men of foresight, ability and fortitude were encouraged to build railroads, and still more railroads, so that the whole of this land of promise might be opened up to mankind. And there the romance of the rails began.

Who of us today can envision the travail of those early days? Who of us can appreciate the tremendous sacrifice of brain, brawn and bravery that willingly was laid on the altar of a glorious ideal. To those indomitable men who thought, planned, fought, worked, cursed, and even died for the realization of that ideal, we of today owe a great debt for the heritage they left us. They over-rode opposition, trampled greed, overcame financial disaster, battled hostile redmen, crushed outlawry, defeated famine and disease—and built railroads. They bored through impregnable mountains; spanned turbulent rivers; conquered the ice and snows of the north; the treacherous swamps of the south, and the arid, burning plains of the west. Soldiers of progress they were, though most of them passed into oblivion unheralded and unsung. In the wake of their gleaming bands of rail, there presently followed civilization and cities, industry and agriculture, wealth and happiness.

As the years have rolled by, like a huge panorama turned by the tireless hand of Time, this meagre beginning has become the most remarkable and efficient network of railroad

transportation lines in all the world. Yesterday's little acorn has become today's mighty oak; it has successfully buffeted the storms of gloomy depression and has accumulated glory in the sunshine of substantial prosperity. It has done perhaps more than any other single physical agency to knit these United States into an imperishable Union, where there is neither East nor West, neither North nor South, but only one United people marching steadily onward through a golden past into a glittering future. The cynic may say that their chief object was to make money for their investors. Well, certainly "the laborer is worthy of his hire;" but, just the same, the outstanding result of their gallant efforts has been the cementing indissolubly together of the greatest Nation under God.

There are skeptics also who say that the romance, if any, in railroading went out of fashion with the end of the construction and early development era. To that I cannot subscribe. As for me, I feel that so long as men see bright and shining visions and turn them into marvelous realities; so long as men continue successfully to baffle the powerful forces of Nature; so long, in fact, as men are men and not merely automatons, just so long will romance live in any business. For surely adventure and romance, those enticing sirens of the soul, still urge the valiant pioneer, as in days of old, to seek trails that lead far beyond his own tiny horizon into enchanting fields of astounding and profitable deeds.

The day of railroad construction has passed into memory, but the day of perfecting and enlarging its service is here, and the day of new and more wonderful developments in transportation generally is just ahead. The bright visions our forefathers saw a century and a half ago when they "brought forth upon this continent a new nation" have been paled by the commonplace facts of today, and who has the courage to deny that our wildest dreams of future conquest may be but the simple actualities of tomorrow. And the romance of the rails will go on.

Today on these great railroad lines, other equally competent, determined men drive the fleet passenger trains and the long, heavy freight trains hither and yon throughout this broad land day and night, summer and winter at the behest of mankind, and for his pleasure, profit and improvement. They carry him safely, swiftly and comfortably to the far corners of the

land; they bring him the necessities and luxuries of life; they take his products to the markets of the nation; they make his life happier and more complete. In many of his daily requirements they are his able helpers, often unseen and unappreciated. If that be a prosaic task, then imagination is dead; and hot, red blood is ice. These men are paid dollars for their work, but they have something more, something finer. The money a man gets for his work is often the smaller part of his compensation; the big thing is the exaltation of soul he finds in doing something worth while, and that, in the final analysis, is the real reward of today's railroader. There is about railroading a glamour that, once inoculated, few can escape and fewer want to do so. It must be the romance of the thing, the allurements of seeing the wheels go round that keeps so many men in the railroad game despite its vicissitudes.

Included among these is a vast host whose highest ambition is worthily to serve. There are the executives, with keen eyes always on the future, planning so that their roads may always be prepared to meet the exacting and ever-increasing demands made upon them for service; the operating officers, who watchfully keep their fingers on the pulse of traffic, so that it may be kept flowing freely and easily as blood flows through human veins; the engineers, firemen and trainmen who rush their trains through rain, snow, sleet, fog and darkness, through the blistering heat of summer and the icy gales of winter; the men in the shops and round-houses who, with practiced hands, groom the panting steeds for their gruelling race against time and the elements; the trackmen out on the far reaches of the line keeping it fit for its precious burdens; the linemen and towermen on their lonely vigils maintaining at concert pitch the nervous system of the road; the dispatchers with their gaze riveted on clock and train sheets; the station agents maintaining their friendly contact with their local public—these, and all the rest, they are the real railroad.

Yes, gentlemen, there is still romance in the railroad game and a lot of pleasurable thrills—the superlative thrill of valuable accomplishment. Some get their thrill in conquering Nature's stubborn resistance to progress; others by bringing their trains into the home terminal on time despite serious interference; others in securing for their road a particularly attractive piece of traffic; and still others in successfully aiding a patron in distress. And we all have a big thrill when we see our

revenues increasing and our expenses decreasing, with a corresponding drop in operating ratio. Truly it is a life of many desirable compensations, aside from the monetary reward. For even though we be but a small cog in the huge machine, we may rightfully believe that it probably would not function as smoothly were it not for our efforts prodigally expended. We may justly feel that we are public benefactors.

I like to look upon life as a great railroad classification yard, where we are all cars loaded to the brim with some essential commodity, some naturally more valuable than others, some going farther than others. Some will be put into preference trains for which the clear block is always showing, while others will be attached to locals and often diverted in transit or shunted into obscure sidings. Yet, if we finally deliver the goods, whether they be as common sand or chrome nickel steel, and whether we go thirty miles or three thousand, we will be a success. For that's about all there is to success—"delivering the goods"—always doing our own particular job to the very best of our ability, irrespective of what that job may be. And, if we railroaders constantly adhere to this principle, the people of this great Nation may be assured that our railroads will ever properly perform their allotted task of serving them adequately and reasonably, and to their lasting welfare. And, in so doing, we will reap the rich reward of duty well done. For you know, my friends, that:

"Life is a mirror of king and slave;
'Tis just what you are and do;
So give to the world the best you have;
And the best will come back to you."

PRESIDENT: I am sure you have appreciated what Mr. Cox has said, and when I told you he was a good romancer I am confident you will agree that I was right. I would like to say Amen to everything he said. And everyone who is a railroader, and you are all that in some capacity, knows and appreciates the truth of what he said.

Talking about the Pioneer, naturally I think of a train that takes eight hours from here to Philadelphia, and that is possibly 350 miles. That is a fairly fast train. I wanted Mr. Stevenson, President of the Pennsylvania Historical Society, to come up and open the symposium. He has an old time table with a schedule showing the opening of the "pioneer de

luxury service by the fastest boats and the best railroad cars, from Philadelphia to Pittsburgh, only three and half days now." That shows where we came from and how far we have gone.

I do not know whether there is anyone here who would like to talk on Mr. Cox's topic and tell us something about old-fashioned railroading. We have some men here who have railroaded for a good many years. Mr. Secretary, are there any here who could talk along the line of what was done years ago?

SECRETARY: I do not know that I would like to pick out anybody in particular. I see a good many young men here who have been old in railroading though they do not like to admit that they are old in years. I do not think we would have to go farther than the front row of seats to find a man who has had almost a lifetime experience in railroading, Mr. Crawford.

PRESIDENT: To some of us who have not been on the railroad so long his name has always been familiar and has always stood out. I am sure we would like to hear him tell us of some of the things that have happened long ago.

MR. D. F. CRAWFORD: I have enjoyed very much Mr. Cox's talk—"The Romance of Railroading"—of course there is romance in railroading as there is in every occupation. The history of the United States, as he has so well pointed out, is so fully and so closely associated with the romance of railroading that it would be difficult for any one to think of or to attempt to go back of anything he has said.

My own feeling toward the Railroad, though I have not been connected with it lately, is one of intense loyalty, especially of course to the Pennsylvania Railroad, for which I had the pleasure of working for many years. But I am loyal to all the railroads, both in the United States and out of the United States.

When Mr. Cox was speaking I could not help but think of a visit I had to Darlington in England in 1925 when they celebrated the 100th anniversary of the Stockton & Darlington Railroad. And they had what we would call a pageant representing the railroads of that day. The locomotive which had been originally used on the Stockton & Darlington Railroad

had been kept and it was used in the pageant. A man rode ahead of the locomotive on a horse waving a red flag, and the people were dressed in the costumes of 1825. I assure you it was most interesting to see the beginning of the railroad as exemplified in that particular parade.

Equally interesting to those of us who started in the motive power department—I did not start there; I started in one of the freight houses Mr. Cox referred to, but I drifted to the motive power department—is the original Stevenson locomotive which ran in 1829. Among the specifications for that locomotive was that it should make no smoke, something we have not succeeded in attaining yet. Another locomotive is the Puffing Billy, which was operated in what we now call freight service. I had the pleasure of seeing both of them in the South Kensington Museum, and at the Darlington show there were replicas of practically every class of locomotive used in England and on the continent from 1825 up to and including 1925. I walked along lines of locomotives and carriages—as they call them—and goods vans—which we call freight cars. The exhibit indicated clearly that there is romance in railroad construction and especially in the equipment, although the track exhibition was equally interesting, showing the development from the stones instead of ties on which the rails were supported to the present splendid road bed they have in this country and abroad. The development of the signal system and the telegraph was also exhibited, indicating continuous thought on the part of those who had at that time the foresight that we now hope we have in adopting the radio, car retarders and all other sorts of devices.

I have in my own possession a time table of the Cumberland Valley Railroad. Mr. Smith spoke of the time tables Mr. Stevenson had. This gives the trains between Harrisburg and Philadelphia. It shows that a train will leave Harrisburg at 8:30 in the evening and arrive in Philadelphia during the afternoon of the next day. It did not show whether it was a winter or a summer time table.

I find in talking with railroad men in England, Belgium, Germany, France, Switzerland and Italy, that they have the same romance, the same thoughts, we have. I find their problems are very much like ours. Their problem of personnel is receiving the same kind of attention we are trying to give ours. They have had their romance, just as we have had ours.

When we think that the first passenger train in regular service ran in September, 1825, and there are now approximately 300,000 locomotives in the world, of which some 55,000 or 60,000 are in the United States, and that railways touch almost every part of the world. I was looking at a map of Europe this afternoon and I was surprised to see the connections of the Russian railroads running down into the Crimea. To think that from the beginning made at that time the railroads have grown to the size they have and have developed a personnel that gave Mr. Cox the opportunity to give us the splendid address he has given us on the romance of the railroads. It is real romance indeed.

PRESIDENT: Thank you very much, Mr. Crawford. I was just thinking, apropos of what you said about what you saw in England, of the Baltimore & Ohio Centennial celebration some years ago just outside Baltimore, as I walked along and looked at the many types of engines from the small ones to the biggest ever built at that time and watched them go by on that single track, I could not help feeling as Mr. Cox described so well just now, the wonder and the marvel of it all.

I wonder if Mr. Campbell, of the B. & O. is here and if he will tell us something about things that have happened.

MR. J. T. CAMPBELL: Mr. President and Gentlemen, Fellow Members of the Railway Club:—In hearing Mr. Cox speak of the Romance of the Railroad, it takes me back to the early days when I was first inoculated with the railroad germ. It was in 1876 when I was living on a farm. My father and my brother and myself were at Philadelphia at the Centennial. We did not have much money to spend, but my father gave me a ride on the one-rail railroad. There was also an exhibition one of the most beautiful locomotives I ever saw, and I have seen most all types from 1876 to 1929. I have worked on a one-rail railroad. I was ticket agent at Derrick City in McKean County in August, 1878, on this one-rail railroad. I worked on two-rail railroads and I have worked on the third rail.

I have told my story of early railroad days, the romance of the railroad, on a one-rail, a two-rail and a third rail road, and to those who have known me for years and have listened, I think I have bragged more about my railroading in those days,

and the romance of railroading in 1878 is just as unique to me as the romance of railroading today.

Now if I had the time I would explain to you that this one-rail railroad was the only one-rail railroad hauling both freight and passengers in the United States. It was built by Captain Allen of Titusville, Pa., and was on exhibition at the Centennial in 1876 and if any of you were present at the Centennial in 1876 you could verify what I have to say. You are mostly young men here. That does not seem very long ago to me, because I have been in continuous service from July 2, 1878, to the present time. Fifty years have gone along and the good Lord has been very kind to me during that time, for I think I have never lost a day on account of sickness. The Lord has given me two eyes to see with and only one tongue to talk with, and that is why I see more than I talk about.

On this one-rail railroad at Derrick City I was ticket agent and I was appointed by Captain Allen by a couple of my friends of the Oil Creek Railroad. I had to stand on the rungs of the chair in order to be high enough at the window to sell tickets and the fare was ten cents a mile, 40 cents to Bradford, Pa., and 75 cents round trip and you had to buy a ticket before I would let you go on board the train. When you had bought a ticket I opened a gate and let you through. The track was built with posts and one rail. The engine had two boilers, one on each side. The fireman went down on one side and fired one boiler and then went up and over on the other side and fired the other boiler. The passenger coaches were similar to the coaches of today. Two wheels with a flange on each side to keep it from dropping off. Under the passengers was carried the baggage. The conductor passed through the coaches as they do today. You may think it remarkable, but this railroad was built up from the ground in order to clear the ground and there was a cow catcher on each side and it is a remarkable fact that they killed cows sometimes with this cow catcher.

It was July 2, 1878, when I started railroading, and on July 2, 1928, I went back to the old place at Derrick City to see if there were any people living that I left there fifty years ago. I found three men and I must speak to you of two of them in particular. First Mr. E. B. Sage. When I first knew him he was agent for the Erie Railroad at Custer City. I had seen him at the office in Derrick City. He said "How are you getting along with your telegraphing?" I said, "Very slowly."

He said, "Can you receive very well?" I said, "Not much yet." He said, "I have a young man with me that I have got to let go." As he spends so much of his time talking with men outside the station. I thought no more of it at the time. That was in July. In October when I was at the office of the Erie Railroad at East Bradford I saw this same young man that was not advancing very fast in his telegraph work in the office and I said, "Mr. Lundrigan, when did you get this young man?" He said, "Ed Sage sent him down to me to have him brushed up in his telegraphing. He is going to make something out of himself one of these days." Time went on and I lost sight of the young man, but his present address is President of the New York Central. He will recall when I was connected with the one-rail railroad. It was known in the oil fields as the Peg Leg Railroad.

Then I followed along to go to the post office at Derrick City and when I stopped a young man to ask him who lived in an old house across the street I met the post master and he said, "John, don't you remember Bill Smith? Don't you remember me? You taught me telegraphing back in 1882." So of course we had to talk over old times on the Peg Leg Railroad.

The narrow gauge railroad, I speak now of the beautiful engine that was on exhibition at the Centennial at Philadelphia in 1876, was built by the Brooks Locomotive Works. I can describe the outward appearance of that locomotive by saying that the boiler was covered with Russia iron and the bands were of brass. All the mechanism on the inside in the cab was silver plated. The flag posts—headlight brackets—whistle and bell nickle plated. The cab was built of black walnut. The glass was French plate. And on each side of the tank was an oil painting. And the artist who painted these oil paintings, typical of western New York and Pennsylvania, was an artist by the name of V. D. Godfrey. Any time you are in the Capitol at Albany, New York, if you will look up into the dome at those oil paintings up there, it was the same artist who painted those who painted the oil paintings on the sides of this locomotive on exhibition by the Brooks Locomotive Works at the Centennial at Philadelphia. Two years later that locomotive was purchased by Duncan Karns, President of the Parker & Karns City Railroad, the most picturesque president of any railroad in the world. That locomotive was run on the

Parker & Karns City Railroad for several years and we have on the Baltimore & Ohio Railroad an engineer that is running today by the name of Fred Gerber who was a fireman on that locomotive. After that locomotive had run its tour it was finally set off at one of our stations and became a boiler for pumping water. We had an agent at that point by the name of Gray Hanson who is now Assistant Secretary of the Standard Oil Co. of the state of California. And he went to California because he was afraid of this old patched up boiler.

There was also on exhibition at the Centennial at Philadelphia an engine with a silver bell and I think I can still hear that bell ring. That passed on to a road in Chicago. That locomotive won the prize for carrying the mails from Chicago to Council Bluffs in 1871 when there was competition between the railroads in carrying the mail in fast time. I did not hear Mr. Crawford say anything about the fast time that was made when he saw that schedule back in the 80's.

So it is the romance of the days gone by and the romance of those pioneers in railroading that I knew back in the seventies, and it is their vision that has made possible for railroading today to have the position it has, and we consider that we are railroading up to date. But, as Mr. Cox says, what we are doing now will in a few years be commonplace. So I am very proud of the Romance of the Railroads in the pioneer days and having excited your curiosity in my telling of the one-rail railroad as an employee in 1878 also in 1888, ten years later an employee of a third rail railroad, and for the last 41 years on the standard two-rail railroad, the Baltimore & Ohio Railroad.

PRESIDENT: I think we owe Mr. Campbell a great deal for telling us those things. There is not very much history in these days and I think we should listen a great deal more to such talks as these. I remember the History of the Pennsylvania Railroad, published in 1875, showing a photograph of water troughs on the Middle Division, and also pictures of block signals. Sometimes when we think how good we are today, may be we are not so far ahead at that.

I wonder if anybody else would like to add a little bit. Professor Endsley, do you care to say anything?

PROF. L. E. ENDSLEY: It was just since 1880 that I

began to get into trouble myself a little. I think that of all the things on a railroad the locomotive is the thing that impressed me most as a young man. I remember very well when I went to the World's Fair at Chicago in 1893 and saw the "999" which was supposed to be the fastest locomotive in the world of that day. It had made something like 120 miles an hour. And yet it was the last of that type to be built because they appreciated that the boiler was not large enough for the cylinders and wheels. But that locomotive at the World's Fair at Chicago in 1893 was the thing that sent me to Purdue University to take railroad mechanical engineering. So sometimes we do not appreciate what little things do start us.

This thing of working for a railroad is no different from working for anybody else. If you men do not enjoy your work I feel sorry for you. I was at the University some time ago and one of the things I said to the young men there was this: "You are now picking a wife, and my advice to you is to pick a girl that you will want to sit across the breakfast table with for forty years—not for two or three," I give that same advice to all young men entering upon their life work. Pick a job that you will want to be there at eight o'clock or seven o'clock or whenever you are due there, instead of saying "I wish I did not have to go this morning." If you get into that kind of a job, look around and get some other kind of a job.

But railroading is an interesting job, even watching the locomotive. And today I can stop and watch a train go by with admiration.

PRESIDENT: I believe we have with us another gentleman who can tell us something of the things that have gone by in a very interesting manner, Mr. Cannon, General Superintendent of Motive Power, Pittsburgh & West Virginia Railroad.

MR. T. E. CANNON: No, Mr. President, I am not old enough. I never had any experience railroading in the east, but I could tell a lot about the wild west. I commenced railroading September 3, 1870, at the St. Paul city shops. I completed my trade and went out on the road and fired a year and a half, like most men here. At the time I started railroading they had 22 miles of railroad, that was the Great Northern. I followed it up for 55 years and left it.

But the traditions of that country are entirely different from what they are in this country. It was real wild country out there, with Indians and buffalo and elk. I remember once they had a buffalo stampede across the track and they had to wait until it went by. If you do not, they will take the train along with them. They keep their heads down and they will not stop for anything until they get through running. If I were to start telling you about the northwest I would be here all night. I thank you very much.

PRESIDENT: Does any one else care to say anything for the good of the order?

SECRETARY CONWAY: I wonder if I could not qualify as one of the old romancers. None of those fellows will admit that they are old timers. I wonder if I am not old enough to qualify and even admit it? On the railroad with which I was connected some years ago they had an engineer who had some of this romance in his spirit, the siding where he laid out at night with the work train, being some little distance from headquarters, he became the president of the road and pretty much everything else in his own estimation. He did not ask for instructions from headquarters. He had one of the old time eight wheelers, a very light engine with quite a large wheel—mostly wheel with some little bit of boiler. He had plenty of idle time, and in the evenings before dark he would spunk up the engine, and it was done in style. He got flaming red paint and a lot of other brilliant colors and striped her up in style. And to his idea it was a beautiful piece of work. The Master Mechanic came over the road one day on his monthly tours and spied this stray locomotive. The sequel to the story is, that our energetic and artistic engineer friend got thirty days for his romancing.

MR. C. ORCHARD: Before we close the discussion I would like to move a vote of thanks to the speaker of the evening and to those who have contributed to the discussion, on behalf of the Club.

PRESIDENT: Might I suggest that your expression be given by a rising vote.

The motion prevailed by unanimous rising vote.

PRESIDENT: If there is no further business we will stand adjourned, and you will be pleased to repair to the tables for the customary luncheon.

J. D. CONWAY, Secretary.

In Memoriam

PAUL LANGBEIN

Died July 18, 1929

J. P. GOCHNOUR

Died December 6, 1929

J. M. HANSEN

Died November 15, 1929

R E S E R V E D

CAR LIGHTING

COMPLETE EQUIPMENT

ELECTRIC OR GAS



The Safety Car Heating and Lighting Co.

New York Chicago St. Louis Boston Philadelphia San Francisco Montreal

RAILWAY STEEL-SPRING CO.

Springs, Steel Tired Wheels,
Locomotive and Car Wheel Tires.
Pressed Steel Journal Box Lids

GENERAL OFFICE, 30 CHURCH STREET, NEW YORK
BRANCH OFFICES—CHICAGO, ST. LOUIS, ST. PAUL, RICHMOND, DENVER,
SAN FRANCISCO, DALLAS, PITTSBURGH, DETROIT

USED (Service-tested) A. R. A. FREIGHT CAR PARTS

Answering the four questions of chief importance:

QUALITY__Safe as Unused Parts if not actually Safer

QUANTITY_____Substantial Volumes

CONDITION_No more trouble using than Unused Parts

SAVING_____Very Satisfying

Are you receiving our Stock Lists? Write for them and our
interesting proposition.

BRIGGS & TURIVAS, Inc.

Cars (Retired and Second-Hand) and CAR PARTS
of All Kinds

Pittsburgh District Address: Imperial, Pa.

Phone: Imperial 132

General Office: Blue Island (Chicago) Illinois.
Plants: Blue Island, Ill. Chicago Heights, Ill.

Pittsburgh, Pa.

No Re-turning

The Davis "One-Wear" Steel Wheel corrects the underlying causes for contour conditioning.

Every Davis "One-Wear" Steel Wheel is made from a special composition, heat-treated steel that resists wear and keeps the wheel continually in service.

Davis "One-Wear" Steel Wheels require no re-turning or extra expense for maintenance. Their unusual resistance to wear gives them long life.

AMERICAN STEEL FOUNDRIES

New York

CHICAGO

St. Louis

YOUNGSTOWN

ALL STEEL CORRUGATED FREIGHT CAR DOORS

CAMEL

FREIGHT CAR DOOR FIXTURES

Weather and Burglar Proof

Top or Bottom Supported

CAMEL SALES COMPANY

332 South Michigan Avenue

CHICAGO, ILLINOIS

Pressed Steel Car Co.

MANUFACTURERS OF

FREIGHT and PASSENGER

-:- CARS -:-

CASTINGS

FORGINGS

BOLSTERS

BRAKEBEAMS

TRUCKS

UNDERFRAMES

GREY IRON WHEELS

COMPLETE FACILITIES FOR REPAIRING CARS

OFFICES

New York

Pittsburgh

Chicago

St. Paul

Standard Steel Car Co.

OFFICES

General Offices: Frick Bldg., PITTSBURGH, PA.
 NEW YORK, 170 Broadway
 CHICAGO: Fisher Building

WORKS

Butler, Pa.
 New Castle, Pa.
 Hammond, Ind.

STEEL AND COMPOSITE

FREIGHT CARS

For all Classes of Service, from our Standard Designs,
 or according to Specifications of Purchasers.

Steel Car Underframes

TRUCKS, BOLSTERS, BRAKE BEAMS, ETC.

Capacity 50,000 Cars per Annum INQUIRIES
SOLICITED

Union Steel Casting Company

Pittsburgh, Pa.

Cast Steel Locomotive Frames, Driving Wheel
 Centers, Locomotive Steel Cylinders and
 Miscellaneous Steel Castings

Vanadium, Nickel and other Alloy Steel Castings a
 Specialty

CAR HEATING SPECIALTIES

Use "VAPOR"

{ Metallic Two-inch Steam Con-
 nections between all Cars.

{ Automatic Temperature Control
 Vapor System on all Cars.

VAPOR CAR HEATING CO., Inc.

Railway Exchange - Chicago, Ill.

GENERAL REFRACTORIES COMPANY

Home Office
PHILADELPHIA, PA.

Manufacturers of High Grade Fire Brick
For All Railroad Purposes

Locomotive Arch Brick
Direct from Manufacturer to Consumer

Consignment Stocks, Prompt Deliveries
Quality and Service Assured

RAILWAY SALES DEPARTMENT

Graybar Building—420 Lexington Avenue
New York City



H. & K.
Rotating Chair
No. 9 0.

CHAIR CAR COMFORT IN DAY COACHES

These Luxurious Chairs

—bring to a focus the steady improvement made in Hale & Kilburn car seats during the last half century. The tendency in this development has been constantly towards greater comfort, larger and more commodious seats, softer springs and greater beauty.

Hale & Kilburn Company

General Offices and Works:

1800 Lehigh Ave., Philadelphia

NATHAN

MECHANICAL LUBRICATORS

WATER COLUMNS INJECTORS LUBRICATORS

LOW WATER ALARMS

Locomotive and Stationary Boiler Fittings

NATHAN MANUFACTURING CO., 250 Park Avenue, New York

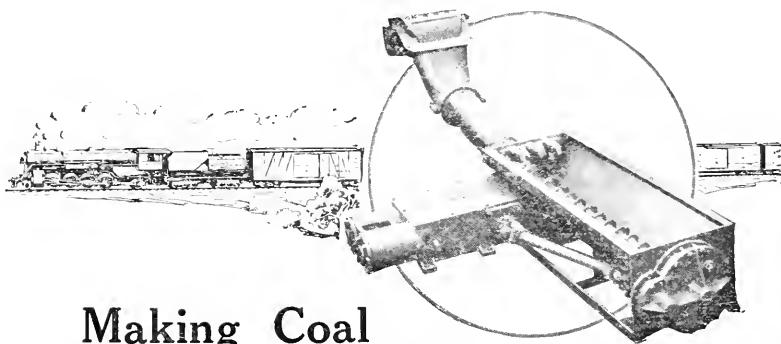
From the Early Period
of the Telegraph to the present
remarkable development in the field of Electricity

KERITE

has been continuously demonstrating the
fact that it is the most reliable and
permanent insulation known

THE KERITE INSULATED WIRE & CABLE COMPANY INC.

NEW YORK CHICAGO SAN FRANCISCO



Making Coal Produce More

BY compelling the boiler to develop its full capacity, stoker firing increases locomotive output — locomotive ton-mile-per-hour capacity.

Big modern power is almost universally stoker fired. Stoker firing of existing

power is just as advisable— and just as economical.

Simplex Type "B-K" Stokers are readily applicable to any existing locomotive. They mean greater steaming capacity — greater effectiveness — greater earning capacity.

THE STANDARD STOKER COMPANY, Inc.

New York

Erie

Pittsburgh

VULCAN

CRUCIBLE STEEL COMPANY

Established in 1900

ALIQUIPPA, PA.

Makers of the better grades of Tool Steel, and the pioneers in the manufacture of high quality Vanadium Steels.

KING

METALLIC

for Locomotive Piston Rods, Valve Stems and Air Pumps.



PACKINGS

King Sander
Security Latch
King Indestructible Oil Cups
King Hand Boring Lathe
Gollmar Bell Ringer
Leach Sanders

Reg. U. S. Pat. Off.

THE U. S. METALLIC PACKING CO.

PHILADELPHIA, PA.

23 USEFUL YEARS

NEW developments and devices are interesting, but the proven products of long experience are more reliable. That is why men in positions of responsibility demand experience-proven products—demand facts. Grip Nut Company is twenty-three years old; twenty-three years ago, they made the first *Grip Nut*; their growth has been a continuous evolution toward perfection; that growth still continues. These are the facts.

Many American railroads, with records of less than two per cent "bad-order" equipment, have used Grip Nut Company's products for eighteen successive years—and are still using them. This is the *proof*. Yes, men in positions of responsibility demand *facts*; they demand experience-proven products. *They demand Grip Nuts.*

GRIP NUT COMPANY

5917 South Western Avenue

Chicago, Illinois

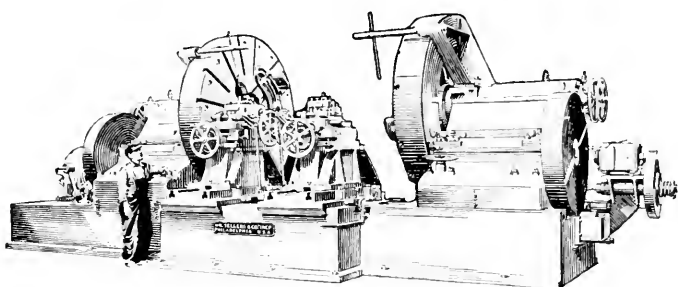
TUCO PRODUCTS CORPORATION

Tuco National Standard Roofing
Tucolith Composition Flooring
Flexolith Composition Flooring
Imperial Car Window Screens
Royal Adjustable Car Window Screens
Universal Car Window Screens
National Standard Steel Trap Doors
Universal Steel Trap Doors
Trap Door Locks and Holders

30 CHURCH STREET
NEW YORK

Resisto Hairfelt Insulation
Tuco Rockwul-Jacket Insulation
Tucork Insulation for Car Floors
Tuco Floor Plate Preservative
Eclipse Deck Sash Ratchets
Steel Car Sheathing, Panels and Slats
Reliance Sash Balances
Perfection Sash Balances
Brown Window Sash Weatherstrips

PEOPLES GAS BUILDING
CHICAGO



Railroad Shop Tools

Driving Wheel Lathes

Car Wheel Lathes

Axle Lathes

Driving Box Boring and Facing Mills

Car Wheel Boring Mills

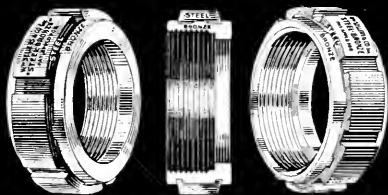
Boring and Turning Mills

Tool Grinders

Drill Grinders

WM. SELLERS & CO., Incorporated

PHILADELPHIA, U. S. A.



SELLERS Steel Bronze Coupling and Hose Nuts

Possess all the advantages of both all-steel and all-brass nuts and eliminate their objectionable features. The bronze lining is cast by a special process within the steel band and is united to it by cross ribs, dovetails and internal lugs, forming one solid piece. Furnished in sizes interchangeable with railroad nuts.

Adopted as standard by many large railroad systems

WM. SELLERS & CO., Incorporated
Injector Dept. PHILADELPHIA, U. S. A.

BOILER COMPOUNDS

SOOT REMOVER



Buckeye Chemical Co.

Factory and Laboratory:

DETROIT, MICH.

Pittsburgh, Pa.
5621 Wellesley Ave.
Montrose 1362

Rochester, N. Y.
82 St. Paul St.
Main 3084

Over Thirty Years Serving the Engineer

Donated by A Friend

for welding and cutting

in the railroad shops of Pittsburgh district and thruout the country —
Airco Oxygen—Airco Acetylene—Airco-Davis-Bournonville Welding and Cutting Apparatus—Supplies.

AIR REDUCTION SALES CO.

Pittsburgh—1116 Ridge Avenue

New York—342 Madison Avenue

OKONITE (RUBBER) and VARNISHED CAMBRIC INSULATED WIRES and CABLES

Manson Tape

THE OKONITE COMPANY

Okonite Tape

Founded 1878

THE OKONITE-CALLENDER CABLE COMPANY, Inc.

Factories: Passaic, N. J. - Paterson, N. J.

Sales Offices:

New York - Chicago - Pittsburgh - St. Louis - Atlanta
Birmingham - San Francisco - Los Angeles - Seattle - Dallas



SUPERHEATERS

DESIGNING ENGINEERS AND MANUFACTURERS
OF ELESKO STEAM SUPERHEATERS FOR
LOCOMOTIVE, MARINE AND STATIONARY
BOILERS



FEED WATER HEATERS, EXHAUST
STEAM INJECTORS AND PYROMETERS
FOR LOCOMOTIVES

17 East 42nd Street
NEW YORK

THE SUPERHEATER COMPANY

Peoples Gas Building
CHICAGO

OFFICIAL PROCEEDINGS

RAILWAY CLUB OF PITTSBURGH

\$1.00 Per Year



25¢ Per Copy

Vol. XXIX

JANUARY 23, 1930

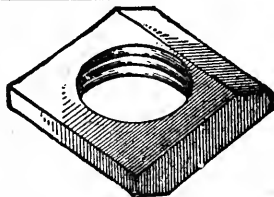
No. 3.

AVIATION AND THE RAILROADS

By R. W. COST, Railroad and Aviation Lighting Engineer,
Westinghouse Lamp Company, Bloomfield, N. J.

Steel Car Forge Company PITTSBURGH, PENNSYLVANIA

FORGINGS



Dieter Lock and Holding Nuts

STANDARD SAFETY NUT
CORPORATION

30 CHURCH ST.

NEW YORK

LOX-ON DEVICES CORPORATION

PAUL W. DIETER, President

30 CHURCH STREET

NEW YORK CITY

LEWIS IRON, "The Iron Superior"

Penn Iron & Steel Company, Creighton, Pa.

SOLE SALES AGENTS,

Joseph T. Ryerson & Son, Inc., Chicago, Ill.

OFFICIAL PROCEEDINGS
OF
The Railway Club of Pittsburgh

Organized October 18, 1901

Published monthly, except June, July and August, by The Railway Club of Pittsburgh, J. D. Conway, Secretary, 515 Grandview Ave., Pittsburgh, Pa.

Entered as Second Class Matter February 6, 1915, at the Postoffice at Pittsburgh, under the Act of March 3, 1879.

Vol. XXIX
No. 3

Pittsburgh, Pa., January 23, 1930

\$1.00 Per Year
25c Per Copy

HAGAN FURNACES

*have Proven very successful
in every phase of Railroad usage.*

George J. Hagan Company
Chamber of Commerce Building.
Pittsburgh Penna.



Starrett



The Standard
For Accuracy



Cut Quicker
Last Longer



Accurate
Reliable

THE L. S. STARRETT CO., ATHOL, MASS., U. S. A.

SINCE 1900

For almost thirty years, Johnson Bronze has successfully served the railroads of this section with high quality products and prompt deliveries.

Whether the order calls for car brasses, engine brasses, general steam castings, miscellaneous bronze bushings or cored and solid bar bronze, you can be sure it will be handled with dispatch and that the product delivered will be up to specification in every detail.

Write for Catalog

JOHNSON  BRONZIE
BUSHINGS BEARINGS BAR BRONZE

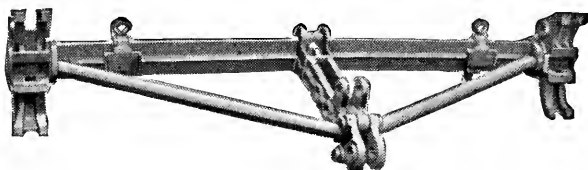
New Castle, Pa.

BRAKE BEAMS

"Solid Truss"
and
Built-Up Types

AND

Brake Beam Supports



DAVIS "SOLID TRUSS" PASSENGER BEAM

ALSO

Pressed Steel Journal Box Lids

DAVIS BRAKE BEAM CO.

JOHNSTOWN, PA.

Sales Office: 418 Sixth Avenue, Pittsburgh, Pa.

GOULD

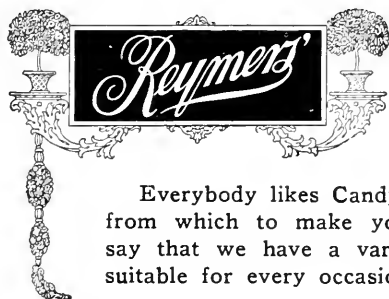
Side Frames Bolsters Couplers
 Passenger and Freight Journal Boxes
 Open Hearth Steel Castings

THE GOULD COUPLER CO.

New York

Works: Depew

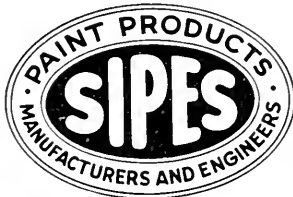
Chicago



CANDIES

Everybody likes Candy—with almost a thousand candies from which to make your selection, we can truthfully say that we have a variety to suit every taste—a box suitable for every occasion.

Lacquers
 Varnish
 Enamels
 Oil Colors



REG U S PAT OFF.

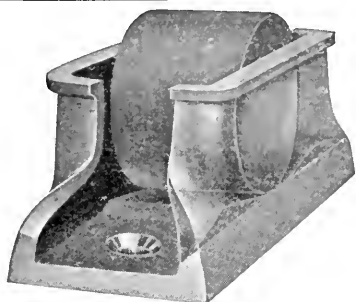
Railway and
 Industrial
 Protective
 Coatings

JAMES B. SIPE AND COMPANY
 PITTSBURGH, U. S. A.

The Q & C Company, 90 West St., N. Y. C.

Peoples Gas Building - - Chicago
 Railway Exchange Building - St. Louis

**Manufacturers of Track, Car and Engine
 Specialties**



STUCKI Side Bearings

A. STUCKI COMPANY
OLIVER BUILDING
PITTSBURGH, PA.

Canadian Representative
THE HOLDEN CO., LTD.
Montreal, Canada.

SINGLE PLATE CHILLED TREAD WHEELS

With

Reinforced Flanges for the Most Severe Service
Over 500,000 in Service

SOUTHERN WHEEL COMPANY



*Our tests determine the best
shoe for each type of service.*

The American Brake Shoe and Foundry Company

230 Park Ave., New York

332 So. Mich. Ave., Chicago

The Pocket List of Railroad Officials

*Used by the Officers of all Railroads on
The North American Continent*

Issued Quarterly

Subscription Price, \$6.00 per annum

Single Copies, \$2.50

Advertising rates on application

THE OFFICIAL RAILWAY EQUIPMENT REGISTER

ISSUED MONTHLY

Descriptive of freight and passenger cars of the Railways and
Private Car Companies in the United States, Canada and Mexico.

Subscription Price, \$15.00 per annum.

Single Copies, \$2.00.

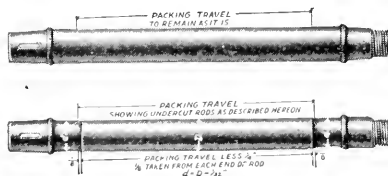
THE RAILWAY EQUIPMENT AND PUBLICATION CO.

J. ALEXANDER BROWN, Vice-President and Manager

424 West 33rd Street

New York

IF WE stated we could sell you the same steel you are now using for your piston rods at half the price you are paying, you would be greatly interested. Well, we can practically do that and make an additional saving of half the cost of labor required in preparing the rod for the engine by undercutting, as illustrated in cut below, instead of grinding or turning the wearing surface. That practice will extend the life of the rod fifty per cent or more. Paxton-Mitchell Metallic Packing will pack its own wear steam-tight until a rod has been reduced one-quarter of an inch. You will also save the cost of one set of packing, one sliding plate and one cone each time engine is in for general repairs.



Half sets of our packing segments may be reclaimed from scrap for use in making at least fifty per cent of renewals due to the four segment combination of our packing.

"The Packing That Packs"

The Paxton-Mitchell Company
OMAHA, NEBRASKA

NATIONAL FRICTION DRAFT GEAR

The Perfect Shock Absorber

Requires No Re-Adjustment

NATIONAL MALLEABLE AND STEEL CASTINGS CO.

General Office — Cleveland, O.

That this company should outgrow its laboratories three times in twenty years is tribute to the effectiveness of its work.

Last month we moved into a new laboratory of more than doubled facilities.

DEARBORN CHEMICAL COMPANY

310 S. Michigan Avenue, Chicago 205 East 42nd Street, New York
Farmers Bank Bldg., Pittsburgh



SYMINGTON

Malleable Iron and Steel Journal Boxes
for Passenger and Freight Equipment

FARLOW DRAFT ATTACHMENTS

THE SYMINGTON COMPANY

New York Chicago Boston Baltimore Rochester

BALL'S
Varnish Remover

OXOLIN
REGISTERED
THE IDEAL PAINT OIL

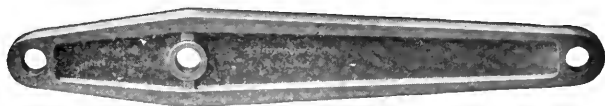
B. C.
Spirits

Ball Chemical Company

CHICAGO Office,
63 W. Van Buren Street.

Fulton Bldg., PITTSBURGH, PA.

Schaefer Drop-Forged Brake Levers



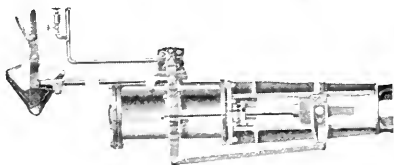
Designed to give uniform stress conditions throughout entire body of lever. Levers are drilled from templets and exact spacing between holes is thus assured.

Drop forging makes all levers uniform.

Lighter in weight with increased strength.

Schaefer Equipment Co.

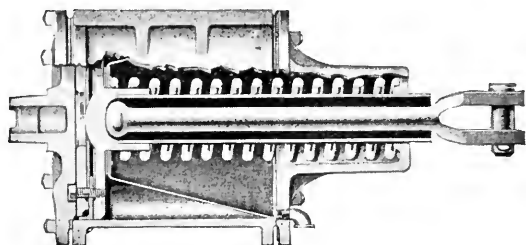
General Offices: Koppers Bldg., Pittsburgh, Pa.



ALCO REVERSE GEAR

THE Alco Reverse Gear was designed to meet the demands of diversified service. While it serves acceptably in heavy freight service, it responds equally well to the needs of high speed passenger requirements. Again, in fast freight, helper and switching service it gives quick and accurate valve gear adjustments. In other words, it meets the conditions imposed in all classes of service—it does not excel in one at the expense of another.

AMERICAN LOCOMOTIVE COMPANY
30 CHURCH STREET NEW YORK CITY



This New Protector Keeps Cylinders Clean

A collapsible water-proof hood that prevents moisture and dirt from reaching the cylinder walls. Lengthens life of packing cups, reduces leakage, decreases maintenance cost. . . Ask for Circular Notice 1082.

Westinghouse Air Brake Co., Wilmerding, Pa.

Positive Dependability

with

Westinghouse Electrical Equipment

for

Railway Signaling Service



Westinghouse Electric & Mfg. Co.
Pittsburgh, Pennsylvania

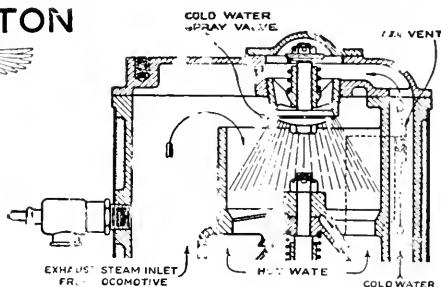
Highly Efficient Switchers Help Earn Dividends

In order that the high efficiency of road engines may be fully utilized, there must be adequate power at all terminals and in busy yards.

These Works have built large numbers of high-power, snappy switchers, specially designed for the service, which speed up operations, and help earn dividends.

The Baldwin Locomotive Works
Philadelphia

WORTHINGTON



The Secret of Worthington Feedwater Heater Efficiency —direct contact of water and exhaust steam

Scale and bad water have no effect on the temperature of feedwater delivered by the OPEN TYPE HEATER.

WORTHINGTON PUMP and MACHINERY CORPORATION

Works: Harrison, N. J. Cincinnati, Ohio. Buffalo, N. Y. Holyoke, Mass.

Executive Offices: 2 Park Avenue, New York, N. Y.

GENERAL OFFICES: HARRISON, N. J.

District Offices in 24 U. S. Cities.

Branch Offices or Representatives in Principal Cities of all Foreign Countries

H-9 F

Factors that Increase Locomotive Effectiveness



The Locomotive BOOSTER

Franklin Railway Supply Co., Inc.

17 East Forty-Second Street, New York

Chicago, Ill.

St. Louis, Mo.

San Francisco, Cal.

332 S. Michigan Ave.

Boatmen's Bank Bldg.

774 Monadnock Bldg.

Franklin Railway Supply Company, Limited, Montreal

Export Department—International Railway Supply Co.

30 Church Street, New York

STAYBOLTS FOR ANY BOILER REQUIREMENT

F. B. C. Welded, TATE Threaded,
and Flannery Two-Piece
Flexible Staybolt Assemblages

NU-TATE and TELL-TALE Bolts

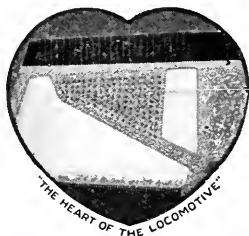
Crown Stays and Rigid Bolts
(STRAIGHT OR REDUCED BODIES)

Bulletins Describing all Flannery
products mailed upon request.

FLANNERY BOLT CO.

FLANNERY BLDG.

PITTSBURGH, PA.



Nicholson Thermic SYPHONS

Nicholson Thermic Syphons are in
service in locomotives on all six con-
tinent.

LOCOMOTIVE FIREBOX CO.,
310 S. Michigan Ave., Chicago, Ill.

Hunt-Spiller Air Furnace Gun Iron

HAS THE
Strength and Wearing Qualities
THAT ARE ABSOLUTELY NECESSARY IN
LOCOMOTIVE CASTINGS

PRICES MODERATE

Manufactured Only By

RESULTS GREAT

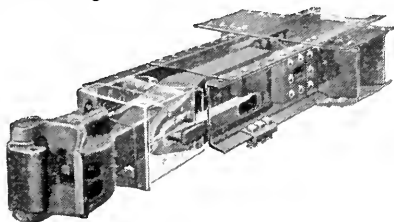
Hunt-Spiller Manfg. Corporation

J. G. PLATT, President and General Manager
OFFICE AND WORKS:
383 DORCHESTER AVENUE
SO. BOSTON, MASS.

V. W. ELLET.
Vice President

The Buckeye Steel Castings Co.

COLUMBUS
NEW YORK
CHICAGO



ST. PAUL
LOUISVILLE
LONDON

"BUCKEYE" Yoke and Draft Attachments

FORT PITT SPRING COMPANY

PITTSBURGH, PA.

SPRINGS BOTH COIL
& ELLIPTIC

For Railroad Service

ALLOY SPRINGS A SPECIALTY

Malleable CASTINGS

OF UNIFORM QUALITY
ARE PERMANENT

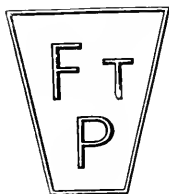
CURRENT AVERAGE TESTS

For 12 Months

910 Consecutive Heats

Tensile Strength, Yield Point Elong. %
Lbs. per sq. in. Lbs. per sq. in. in 2 in.

HIGH	61370	40420	28.1
LOW	56490	37210	22.6
AVERAGE	58344	38494	25.9



*This Trade-mark is your security on
Railroad Car Castings*

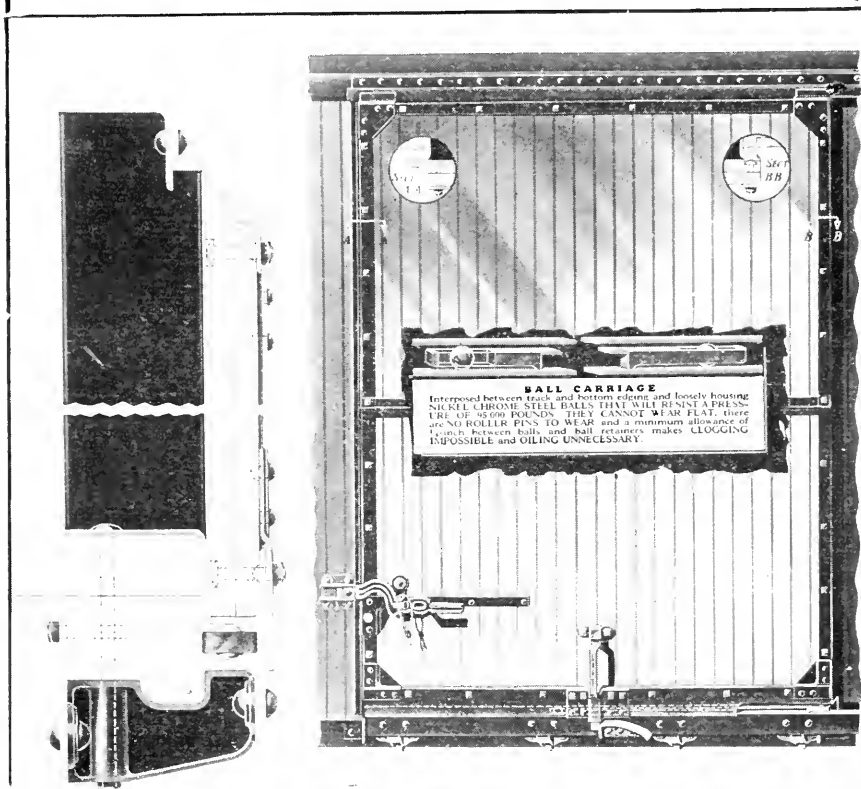
Send Blue Prints for Estimates

Fort Pitt Malleable Iron Company
PITTSBURGH, PA.

INDEX—ADVERTISERS.

NAME	Page	NAME	Page
Air Reduction Sales Co.....	xxiv	Penn Iron & Steel Co.....	Front Cover
American Brake Shoe & Foundry Co.....	iii	The Pocket List of Railroad Officials	iii
American Locomotive Co.....	vi	Pressed Steel Car Co.....	xviii
American Steel Foundries.....	xviii	The Q & C Co.....	ii
Baldwin Locomotive Works....	viii	Railway Equip't. and Publication Company	iii
Ball Chemical Co.....	v	Railway Steel Spring Co.....	xvii
Briggs & Turivas.....	xvii	Reymer & Bros., Inc.....	ii
Buckeye Chemical Co.....	xxiv	Safety Car Heat. & Lighting Co....	xvii
The Buckeye Steel Casting Co.	xi	Schaefer Equipment Co.....	v
Camel Sales Co.....	xviii	Wm. Sellers & Co., Inc.....	xxiii
Chicago Railway Equip. Co.....	xiii	Sipe, James B., & Co.....	ii
Davis Brake Beam Co.....	i	Southern Wheel Co.....	iii
Dearborn Chemical Co.....	iv	Standard Safety Nut Corp. Front	Cover
Flannery Bolt Co.....	x	Standard Steel Car Co.....	xix
Fort Pitt Malleable Iron Co....	xi	The Standard Stoker Co.....	xxi
Fort Pitt Spring Co.....	xi	The L. S. Starrett Co.....	Inside Front Cover
Franklin Rwy. Supply Co., Inc.	ix	Steel Car Forge Co.....	Front Cover
General Refractories Co.....	xx	Stucki Co., A.....	iii
The Gould Coupler Co.....	ii	The Superheater Co.....	Front Cover
Grip Nut Co.....	xxii	The Symington Co.....	v
Hagan, George J. Company	Inside Front Cover	Tuco Products Corp.....	xxii
Hale & Kilburn Co.....	xx	Union Spring & Mfg. Co.....	xiv
Hunt-Spiller Mfg. Corporation	x	Union Steel Casting Co.....	xix
Johnson Bronze Co.....	i	U. S. Metallic Packing Co.....	xxii
The Kerite Insulated Wire & Cable Co., Inc.....	xxi	Vapor Car Heating Co., Inc....	xix
Locomotive Firebox Co.....	x	Vulcan Crucible Steel Co.....	xxii
Lox-On Devices Corp.....	Front Cover	Westinghouse Air Brake Co....	vii
Nathan Mfg. Co.....	xx	Westinghouse Elec. & Mfg. Co.	vii
National Malleable and Steel Castings Co.	iv	Worthington Pump and Machinery Corporation	ix
The Okonite-Callender Cable Company	Front Cover		
Paxton-Mitchell Co.....	iv		

THE BALL BEARING CAR DOOR



It Eliminates

FRICTION

DAMAGED GUIDES

FLATTENED ROLLERS

NECESSITY OF OILING

SNOW AND ICE FROM THE TRACK

UNSATISFACTORY OPERATION DUE TO INACCURATE MACHINING

UNSATISFACTORY OPERATION DUE TO CORROSION

PILFERING

BROKEN HANGERS

WEAR OF ROLLER PINS

"BUTTING" IN TRANSIT

MANUFACTURED and SOLD

IN BOTH TOP HUNG AND BOTTOM SUPPORTED TYPES BY THE

CHICAGO RAILWAY EQUIPMENT COMPANY

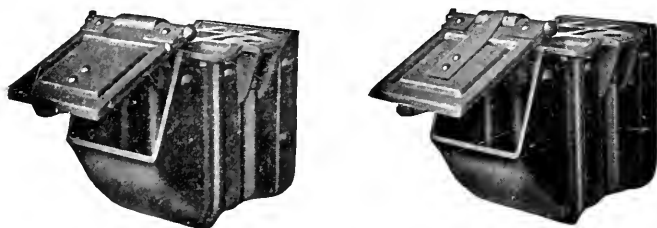
CHICAGO, ILLINOIS

Union Spring & Manufacturing Co.

RAILROAD SPRINGS

Kensington All Steel Journal Boxes

STEEL CASTINGS



Lightest and Strongest M. C. B.
Journal Boxes Made

— — — — —
WORKS:
NEW KENSINGTON, PA.
— — — — —

PITTSBURGH OFFICE
2001 CLARK BUILDING

— — — — —

NEW YORK	-	-	-	50 Church Street
CHICAGO	-	-	-	Fisher Building
RICHMOND, VA.	-	-	-	Mutual Building
LOUISVILLE, KY.	-	Equitable	Life & Cas. Bldg.	
BALTIMORE, MD.	-	-	Munsey Building	
PHILADELPHIA, PA.	-	-	226 South 15th Street	

OFFICIAL PROCEEDINGS OF The Railway Club of Pittsburgh

Organized October 18, 1901

Vol. XXIX
No. 3.

Pittsburgh, Pa., January 23, 1930

\$1.00 Per Year
25c Per Copy

OFFICERS FOR 1929-1930

President E. W. SMITH, Vice President, The Pennsylvania Railroad, Pittsburgh, Pa.	
First Vice President PROF. LOUIS E. ENDSLEY, Consulting Engineer, Pittsburgh, Pa.	Secretary J. D. CONWAY, 1841 Oliver Building, Pittsburgh, Pa.
Second Vice President J. E. HUGHES, Superintendent, P. & L. E. R. R., Pittsburgh, Pa.	Treasurer E. J. SEARLES, Manager, Schaefer Equipment Company, Pittsburgh, Pa.

Executive Committee

FRANK J. LANAHAH, Pres., Fort Pitt Malleable Iron Co., P. O. Box 1054, Pgh., Pa.
A. STUCKI, Engineer, A. Stucki Company, 419 Oliver Bldg., Pittsburgh, Pa.
SAMUEL LYNN, Supt., Rolling Stock, P. & L. E. R. R., McKees Rocks, Pa.
D. F. CRAWFORD, Consulting Engineer, 5243 Ellsworth Avenue, Pittsburgh, Pa.
F. G. MINNICK, General Manager, P. & L. E. R. R., Pittsburgh, Pa.
G. W. WILDIN, Asst. Vice President, Westinghouse Air Brake Co., Wilmerding, Pa.
E. J. DEVANS, General Superintendent, B. R. & P. Ry. Co., Du Bois, Pa.
W. S. McABEE, Vice President, Union Railroad Co., East Pittsburgh, Pa.

Membership Committee

E. A. RAUSCHART, Mechanical Superintendent, Montour Railroad, Coraopolis, Pa.
OTIS R. HALE, Dis. Sales Mgr., American Loco. Co., Farmers Bank Bldg., Pgh., Pa.
T. E. CANNON, Gen. Supt., Locos. & Equipment, P. & W. Va. Ry., Pittsburgh, Pa.
GUY M. GRAY, Superintendent Motive Power, B. & L. E. R. R., Greenville, Pa.
C. E. PEIFFER, Master Car Builder, B. R. & P. Ry., Du Bois, Pa.
J. S. LANAHAH, Vice President, Fort Pitt Malleable Iron Co., Pittsburgh, Pa.
E. EMERY, Railway Supplies, 304 Oliver Building, Pittsburgh, Pa.
R. M. LONG, Air Brake Inspector & Instructor, P. & L. E. R. R., McKees Rocks, Pa.
DONALD O. MOORE, Mgr. of Traffic Division, Chamber of Commerce, Pittsburgh, Pa.
J. A. RALSTON, Mechanical Engineer, Union Railroad, Frick Bldg. Annex, Pgh., Pa.

Subject Committee

C. O. DAMBACH, Supt., P. & W. Va. Ry. Co., Wabash Bldg., Pittsburgh, Pa.
KARL BERG, Asst. Supt., Motive Power, P. & L. E. R. R., McKees Rocks, Pa.
S. G. DOWN, Vice President, Westinghouse Air Brake Company, Wilmerding, Pa.

Finance Committee

W. C. HANSEN, Sales Engineer, A. Stucki Co., 419 Oliver Bldg., Pittsburgh, Pa.
T. M. BLAKLEY, R. F. of E., Pennsylvania R. R., 161 Emerson Ave., Aspinwall, Pa.
J. H. CARROLL, JR., Freight Traffic Mgr., B. & O. R. R., 821 Oliver Bldg., Pgh., Pa.
W. F. CUNNINGHAM, Supt. Motive Power, Monongahela Ry., 3169 Ashlyn St., Pgh., Pa.
LLOYD SUTHERLAND, General Storekeeper, P. & L. E. R. R., McKees Rocks, Pa.

Entertainment Committee

CHARLES ORCHARD, Special Agent, Traffic Dept., Carnegie Steel Co., Pgh., Pa.
F. M. BROWN, Supt., P. & L. E. R. R., Pittsburgh, Pa.
ROBERT ROGERS, Sales Agent, American Car & Foundry Company, Pittsburgh, Pa.

Reception Committee

O. L. WRIGHT, District Manager, The Duff-Norton Mfg. Co., Pittsburgh, Pa.
CHARLES J. NIEMAN, Secretary & Treasurer, Penn Iron & Steel Co., Creighton, Pa.
GEORGE F. LAURENT, Sales Engineer, Fort Pitt Malleable Iron Co., Pgh., Pa.
A. B. WHITE, Superintendent, B. R. & P. Ry. Co., Punxsutawney, Pa.
F. I. SNYDER, Vice President and General Mgr., B. & L. E. R. R., Pittsburgh, Pa.
COL. H. C. NUTT, Pres. & Gen. Mgr., Monongahela Railway Co., Pittsburgh, Pa.

Past Presidents

*J. H. McCONNELL.....	October, 1901, to October, 1903
*L. H. TURNER.....	November, 1903, to October, 1905
F. H. STARK.....	November, 1905, to October, 1907
*H. W. WATTS.....	November, 1907, to April, 1908
*D. J. REDDING.....	November, 1908, to October, 1910
*F. R. McFEATHERS.....	November, 1910, to October, 1912
A. G. MITCHELL.....	November, 1912, to October, 1914
*F. M. McNULTY.....	November, 1914, to October, 1916
J. G. CODE.....	November, 1916, to October, 1917
*D. M. HOWE.....	November, 1917, to October, 1918
*J. A. SPIELMANN.....	November, 1918, to October, 1919
H. H. MAXFIELD.....	November, 1919, to October, 1920
FRANK J. LANAHAH.....	November, 1920, to October, 1921
SAMUEL LYNN.....	November, 1921, to October, 1922
D. F. CRAWFORD.....	November, 1922, to October, 1923
GEO. D. OGDEN.....	November, 1923, to October, 1924
A. STUCKI.....	November, 1924, to October, 1925
F. G. MINNICK.....	November, 1925, to October, 1926
G. W. WILDIN.....	November, 1926, to October, 1927
E. J. DEVANS.....	November, 1927, to October, 1928
W. S. McABEE.....	November, 1928, to October, 1929

*—Deceased.

Meetings held fourth Thursday of each month except June, July and August.

PROCEEDINGS OF MEETING

JANUARY 23, 1930

The meeting was called to order at the Fort Pitt Hotel at 8 o'clock P. M., with President E. W. Smith in the chair.

The following gentlemen registered:

MEMBERS

Allen, E. J.	Everstine, A. Perry
Altsman, W. H.	Falkner, A. J.
Anthony, R. H.	Fisher, E. M.
Armstrong, M. H.	FitzSimmons, E. S.
Ashton, William A.	Flinn, R. H.
Bain, Clifford	Frauenheim, A. M.
Balzer, C. E.	Freeman, E. H.
Beam, E. J.	Fults, J. H.
Beeson, H. L.	Garant, E. J.
Berg, Karl	Glenn, J. H.
Borg, J. E.	Gordon, G. A.
Brady, T. Joseph	Greene, W. F.
Burgham, Maurice L.	Hamilton, H. M.
Byrom, W. Reed	Hansen, William C.
Cannon, T. E.	Harris, Francis C.
Canterbury, L. E.	Herrold, A. E.
Carlson, Lawrence E.	Hilstrom, A. V.
Champion, James H.	Holmes, E. H.
Christy, F. X.	Honsberger, G. W.
Cipro, Thomas	Hoover, J. W.
Conway, J. D.	Hughes, John E.
Cotter, G. L.	Jones, William J.
Courtney, H.	Kaup, Earle W.
Craig, John R.	Kelly, L. J.
Crawford, D. F.	Kernan, J. L.
Cromwell, H. T.	Keys, A. H.
Cunningham, R. T.	Kroske, J. F.
Cunningham, W. P.	Kummer, Joseph H.
Dailey, F. J.	Lanahan, Frank J.
Dalzell, W. E.	Landis, W. C.
Dambach, C. O.	Leckey, Ralph F.
Darrall, William G.	Lobez, P. L.
Davern, F. C.	Lowman, John R.
Davis, Charles S.	Lowry, William F., Jr.
Diven, J. B.	Ludgate, B. A.
Doyle, T. E.	Meyers, William F.
Durkin, James E.	Millar, C. W.
Egbert, J. A.	Miller, J.
Emery, E.	Mills, C. C.
En Dean, J. F.	Mitchell, W. S.
Endsley, Prof. Louis E.	Moir, W. B.

Morgan, A. L.
 Murphy, Homer
 Myers, R. C.
 McLugh, C. A.
 McIntyre, R. C.
 McLaughlin, H. B.
 McNelty, A. P.
 Nash, R. L.
 Nelson, W. M.
 Nieman, Charles J.
 Nieman, H. L.
 O'Leary, J. J.
 Paisley, F. R.
 Passmore, H. E.
 Pollock, J. H.
 Pringle, P. V.
 Ralston, J. A.
 Rankin, B. B.
 Rauschart, E. A.
 Rush, Benjamin H.
 Saltic, Thomas
 Sample, W. E.

Severn, A. B.
 Sharp, H. W.
 Shellenbarger, H. M.
 Shelly, D. L.
 Sherrard, Henry M.
 Shriver, W. W.
 Simons, Philip
 Smith, E. W.
 Stark, F. H.
 Stearns, K. R.
 Stoffregen, Louis E.
 Tyrie, R. M.
 Uline, C. S.
 Vandivort, R. E.
 Van Vranken, S. E.
 Van Wormer, G. M.
 Waldron, F. G.
 Walther, G. C.
 Warfel, J. A.
 Wildin, G. W.
 Wright, O. L.
 Young, F. C.

VISITORS

Barnum, H. M.
 Bronold, A. J.
 Campbell, R. R.
 Colbert, J. T.
 Cost, R. W.
 Crossen, M. M.
 Cummings, I. R.
 Davis, William B.
 Dobson, F. L.
 Duwell, W. J.
 Felton, F.
 Ford, William
 Gerber, H. L.
 Gill, C. A.
 Goodwin, R. E.
 Gray, H. M.
 Hickman, J. H.
 Hill, J. B.
 Jones, Owen Robert

Karns, C. D.
 Kipperling, R. K.
 Leavers, E. J.
 Lewis, S. B.
 Langdon, C. V.
 Micklow, C. J.
 Mitchell, Paul L.
 Morrison, W. W.
 Muir, R. Y.
 Neubrand, A.
 Rogatchoff, Theodore
 Ryce, E. S.
 Severn, J. T.
 Smith, Sion B.
 Stein, Max
 Sweeney, John P., Jr.
 Thomas, T. T.
 Waldron, A.
 Wheeler, L. E.

PRESIDENT: With your permission we will dispense with the calling of the roll and the reading of the minutes of the last meeting. We have a record of the attendance on the registration cards. And the minutes are in the hands of the printer and may therefore be approved as printed.

I will ask the Secretary to read the list of applications for membership.

SECRETARY: I have the following applications for membership:

Adams, E. R., Supervisor, Air Reduction Sales Company, 127½ Noblestown Road, Carnegie, Pa. Recommended by M. R. Semmer.

Binney, Charles A., Service Engineer, Standard Stoker Company, Inc., 338 Charles Street, Hornell, N. Y. Recommended by E. A. Rauschart.

Campbell, W. T., Paymaster, Montour Railroad, 1711 State Avenue, Coraopolis, Pa. Recommended by E. A. Rauschart.

Colbert, J. T., General Superintendent, Pittsburgh & Shawmut Railroad, Kittanning, Pa. Recommended by J. E. Hughes.

Diller, Clark, Representative, Gustin-Bacon Manufacturing Company, 1021 Filbert Street, Philadelphia, Pa. Recommended by E. A. Rauschart.

Dobson, F. L., Superintendent, Pittsburgh Division, The Pennsylvania Railroad, Pennsylvania Station, Pittsburgh, Pa. Recommended by J. H. Redding.

Evans, Thomas D., Car Inspector, R. W. Hunt Company, 3510 Massachusetts Avenue, N. S., Pittsburgh, Pa. Recommended by G. M. Van Wormer.

Fowler, J. C., Asst. R. F. of E., Monongahela Division, The Pennsylvania Railroad, 716 Lincoln Street, Monongahela, Pa. Recommended by William McCauley.

Freeman, E. H., Supervisor, Shop Order Bureau, B. & O. R. R., Pittsburgh, Pa. Recommended by W. E. Steen.

Gill, C. A., Supt. Motive Power, B. & O. R. R., Baltimore, Md. Recommended by E. S. Fitzsimmons.

Hamilton, Hugh M., Foreman Passenger Cars, Pressed Steel Car Co., 3026 Merwyn Avenue, Corliss Station, Pittsburgh, Pa. Recommended by G. M. Van Wormer.

Harper, J. T., Asst. to Mechanical Superintendent, Montour Railroad Company, Gayley, R. F. D., McKees Rocks, Pa. Recommended by E. A. Rauschart.

Hayward, Carlton, Chief Clerk to Gen. Supt. Motive Power, The

- Pennsylvania Railroad, 585 South Negley Avenue, Pittsburgh, Pa. Recommended by R. H. Flinn.
- Kagarise, Preston, General Car Inspector, Pennsylvania Railroad, Pennsylvania Station, Pittsburgh, Pa. Recommended by W. B. Moir.
- Kernan, John L., Shipper, Pressed Steel Car Company, 340 Russellwood Avenue, McKees Rocks, Pa. Recommended by G. M. Van Wormer.
- Leavers, E. J., Asst. Foreman, Pressed Steel Car Company, 212 Wright Street, McKees Rocks, Pa. Recommended by G. M. Van Wormer.
- Lindsay, J. H., Division Accountant, B. & O. R. R., 1518 Center Street, Wilkinsburg, Pa. Recommended by W. E. Steen.
- Meinert, Henry, Locomotive Inspector, Montour Railroad, 11 Geneva Street, Etna, Pa. Recommended by E. A. Rauschart.
- Misklow, C. J., Chief Clerk to Asst. Train Master, P. & W. Va. Ry., 116 Junius Street, W. E., Pittsburgh, Pa. Recommended by J. H. Glenn.
- Morrison, W. W., Chief Engineer, Pittsburgh & Shawmut Railroad, Kittanning, Pa. Recommended by J. E. Hughes.
- Remensnyder, G. W., Salesman, Colonial Steel Company, 3438 Delaware Avenue, N. S., Pittsburgh, Pa. Recommended by E. A. Rauschart.
- Sheets, Harry E., Traffic Manager, Montour Railroad Co., 8 Market Street, Pittsburgh, Pa. Recommended by E. A. Rauschart.
- Sherrard, H. M., Supervisor Machine Shop, B. & O. R. R., 2319 Walton Avenue, Mt. Oliver Station, Pittsburgh, Pa. Recommended by W. E. Steen.
- Smiley, Lee S., Sub-Foreman, Pressed Steel Car Company, 1137 13th Street, West Park, McKees Rocks, Pa. Recommended by G. M. Van Wormer.
- Stephen, James, Foreman, Carpenter Shop, Montour Railroad Company, 620 Vine Street, Coraopolis, Pa. Recommended by E. A. Rauschart.
- Thomas, T. T., Foreman, Union Railroad Co., 422 Albert Street, Turtle Creek, Pa. Recommended by R. C. McIntyre.

Thompson, Vice President, Brown & Zortman Machinery Company, 327 Second Avenue, Pittsburgh, Pa. Recommended by E. A. Rauschart.

Watkins, T. A., Insurance Inspector, Pittsburgh Coal Company & Montour Railroad, 3835 Hiawatha St., N. S., Pittsburgh, Pa. Recommended by E. A. Rauschart.

Withrow, R. C., Salesman, Freedom Oil Works, Mercer Road, New Brighton, Pa. Recommended by E. A. Rauschart.

PRESIDENT: In accordance with our By-laws these applications will be referred to the Executive Committee, and upon approval by that Committee the gentlemen will become members without further action.

I want to depart from the routine just a little, to call your attention to the advertisements that appear in the Proceedings. A good many of us get in the habit of picking up the Proceedings, thumbing over five or six pages of the advertisements to look at the members who were present at the meeting, and then read what the speaker of the evening had to say, and the discussion, and at the end throw it down. I just want to say that those advertisements cost some one quite a bit of money, and the Railway Club is able to put out these Proceedings only through having these advertisements. And I think they are rather interesting reading and I want to recommend to all of you to look at them. And as you look them over you will be reminded of some of the fellows who have been most valuable to this Club, such men as Mr. Lanahan, Mr. Nieman and many others. Outside of the reading matter altogether, the advertising part is very interesting and I should like to recommend to you that you do that.

SECRETARY: That is very kind of you. One of the problems of running the affairs of this club is to get the revenue necessary for its proper conduct. The membership fees alone, as most of you appreciate, would not carry the expense of getting out our Proceedings and having meetings such as you are familiar with. We depend for a considerable measure of our success upon the advertisers. Mr. Lanahan frequently tells us that he does not understand how we can get along with but the \$3.00 membership fee and furnish all we do. Our President has hit the vital point. I did not know he was going to bring

up this subject. I think it is very apropos, and I very much appreciate his kind thought.

Since our last meeting we have received information of the death of four of our members as follows:

John H. Mitchell	Died January 16, 1930
George N. Riley	Died January 14, 1930
J. T. Sleeman	Died January 13, 1930
D. L. Wilson	Died September 29, 1929

PRESIDENT: May I suggest that a suitable memorial be prepared to appear in the next issue of the Proceedings. I assume that is agreeable to every one.

Are there any communications?

SECRETARY: I have received the following communications:

Pittsburgh, Pa., January 20, 1930.

To the Officers and Members of
The Railway Club of Pittsburgh.

Gentlemen:

As you probably know, the 21st Annual Convention of the Master Boiler Makers' Association of the United States will be held in the City of Pittsburgh, at the William Penn Hotel, during the month of May, 1930, the dates being the 20th to the 23rd, inclusive.

This Convention will bring to our City the majority of the General Foremen Boiler Makers' from the railroads of our country, and in addition the Supplymen's Association will have a large exhibit of various tools, devices, etc., that pertain to the railroad field.

In behalf of the above association, I wish to extend to you a very cordial invitation to join with the membership of the Association, and arrange to have your meeting during that month on the night of the 22nd (Thursday) so that it will be possible for your membership to come to the Exhibit and view the different displays in the afternoon, and that evening join with the Boiler Makers in the Annual Banquet which is to be held at the William Penn Hotel at 6 o'clock. This will allow you sufficient time to hold your meeting after the Banquet.

Pittsburgh has not been favored with the Convention of this Association for many years, and knowing that your mem-

bership is very largely composed of men who are actively engaged in the railroad fields, we believe it would be very instructive for them to join in this meeting.

Thanking you for giving the matter consideration, and awaiting your advices, I remain,

Yours very truly,

J. ROGERS FLANNERY,
General Chairman,
Pittsburgh Convention Committee,
Master Boiler Makers' Association of the United States.

NATIONAL ASSOCIATION OF COST ACCOUNTANTS,
Pittsburgh Chapter
SPECIAL JANUARY MEETING
Friday, January 24, 1930
Union Club

Dinner 6:30 P. M.

Meeting 8:00 P. M.

Speaker: The Honorable J. Lord Rigby, Deputy Secretary of Revenue, Commonwealth of Pennsylvania.

Subject: Pennsylvania Taxation Under the 1929 Fiscal Code.

This special meeting is being held jointly with the Pittsburgh Chapter of the Pennsylvania Institute of Certified Public Accountants; the Pittsburgh Chapter of the American Institute of Accountants, and the Robert Morris Associates.

The speaker is one well versed in Pennsylvania state taxation.

Come to the dinner at 6:30 P. M. Cost \$2.25 Or if you can't get there for the dinner come to the meeting at 8 P. M.

Notify your Team Captain.

Very truly yours,

PITTSBURGH CHAPTER, N. A. C. A.

By Andrew Blass,
Secretary-Treasurer.

Mr. Charles Nieman of the Penn Iron & Steel Co., being present, supplemented the invitation of the Master Boiler Makers' Association to attend its meetings, inspect its exhibits and attend its banquet. He detailed the successful campaign to bring the convention to Pittsburgh over the efforts of rival cities to capture the prize, called attention to the appropriateness of Pittsburgh, the "Workshop of the World," as a place for such

a convention, and urged the Club to give its strong support and influence for the success of the convention.

Mr. FitzSimmons, also of the Flannery Bolt Co., added a word of appreciation for the Club and emphasized the invitation to attend the meetings of the convention.

Mr. Frank J. Lanahan called attention to the fact that the night of the banquet is the night of our regular meeting, and suggested the postponement of our regular meeting one week, in order that we may all be free to attend the functions of the convention.

Inquiry of the Chairman of the Program Committee, Mr. C. O. Dambach, revealed the fact that the use of the room for our regular meetings has to be engaged long ahead, and that in all probability the room would not now be available for the postponed meeting; and further, that the speaker for that meeting comes from the Pacific Coast and has a very full itinerary and he did not know whether it would be possible to get him on the postponed date; that he had made an effort to advance the date of the meeting, and the speaker was not able to give him another open date earlier than our regular meeting, and for that reason he was not at all sanguine that he would have an open date later.

In view of this information, upon motion duly seconded, and carried. The matter was referred to the President, the Secretary and the members of the Program Committee with power to act, with a view to making such an arrangement, if possible, as will permit the members of our Club to take the fullest part in the convention of the Master Boiler Makers' Association.

PRESIDENT: I think it is only proper to say, as President of the Club, that we appreciate very much the invitation from the Master Boiler Makers' Association and I think we can very well afford to extend our thanks to the two gentlemen who were instrumental in bringing this convention to Pittsburgh. I know the troubles they must have had.

I believe that finishes our business. And it gives me a great deal of pleasure to introduce as the speaker of the evening, Mr. R. W. Cost, Illuminating Engineer, Westinghouse Lamp Company of New York City. I think you will hear a very interesting talk on "Aviation and the Railroads." I think

it will be interesting in such a way that even if we do not know very much about aviation we can grasp at least a little of the fundamentals.

AVIATION AND THE RAILROADS

By **R. W. COST**, Railroad and Aviation Lighting Engineer,
Westinghouse Lamp Company, Bloomfield, N. J.

The composition of an up-to-date consolidated air line time table is quite surprising to the average person who is not familiar with the exceptional progress and development of this new method of rapid transportation. In addition to the time of departure and arrival, the fare between the various cities is listed and notations are made regarding facilities for dining, smoking, etc. An accompanying map usually shows the location of airways and airports of the system and we begin to think of distances between stations in terms of mileage "as the crow flies." Based on the time element of this accelerated travel, our United States have shrunk from one-half to one-third their former size.

Just as the motor coach has developed into an auxiliary to the electric railway for improved service to the public, so has the airplane been employed to enhance rapid transportation in conjunction with the service provided by railroads. With the present development of the airplane as a vehicle for passenger transportation, flying has been for most part confined to daylight operation and the railroad with the Pullman car accommodations carries the passengers by night. Within a few years it is probable that we will witness the operation of flying Pullmans from coast to coast which will be capable of providing luxurious accommodations and requiring only two or three stops enroute for fuel and other supplies.

The experience and efficiency of railroads in handling mass transportation particularly qualify them to coordinate the operation of trains and airplane service. So far the railroads have refrained from creating air lines or acquiring active control of them due apparently to some misgivings regarding safe and profitable operation. Unfavorable publicity on the decreasing number of airplane accidents on commercially operated airways, which is always front page news, has had its detrimental effect. The aeronautical industry has the utmost confidence in its ability to produce increasingly safe aircraft. The Government

will continuously improve the navigational facilities of our national airways in the furtherance of safe and regular operation of aircraft during both day and night. Public interest combined with the rapid strides made in efficient and safe operation augur well for increased profits to operators of air lines.

Aviation Development

A brief review of the circumstances and agencies aiding aviation development in this country may serve to throw some light on the rapid expansion in this industry. These may be classified as follows:

- (1) Inauguration of air mail by the U. S. Post Office Department.
- (2) Activities of the U. S. Department of Commerce under provisions of the Air Commerce Act of 1926.
- (3) Intensive engineering research by the U. S. Army Air Service, U. S. Navy Department and manufacturers of airplanes, engines, and accessories.
- (4) Long distance and endurance flights by Byrd, Lindbergh, Chamberlain, and many other famous pilots too numerous to mention.
- (5) Other agencies such as the Aeronautical Chamber of Commerce, the Guggenheim Research Foundation, and general publicity.

Observing the tremendous expansion and development of aviation in Europe, which is subsidized by the several governments, the U. S. Post Office Department wisely decided to foster the growth of this industry which had its beginning with our own countrymen, the Wright Brothers.

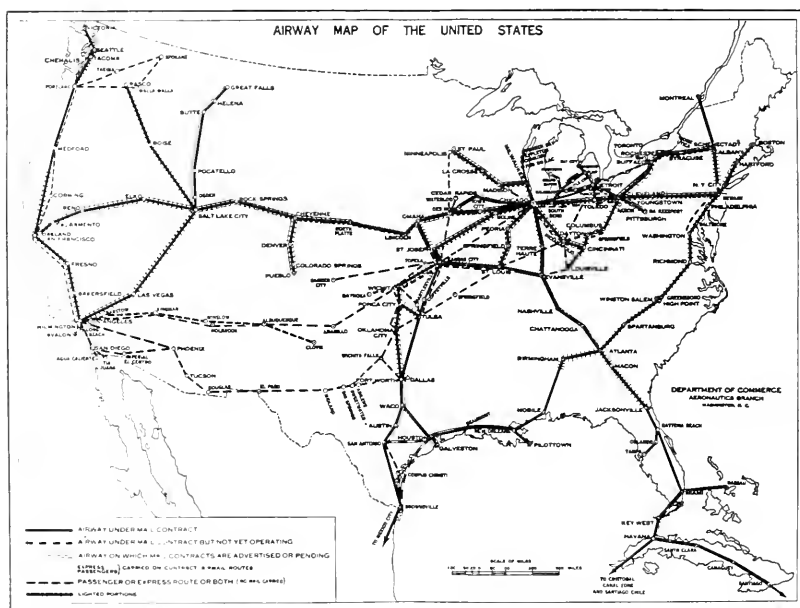
The accomplishments of the Post Office Department during the first few years of the air mail service and the subsequent control and equipment of many more thousands of miles of airways by the U. S. Department of Commerce will stand as monuments to the development of air transportation. This work of equipping the airways with navigational aids was commenced by the U. S. Post Office Department on the section of the transcontinental airway between Chicago and Cheyenne. The program of lighting the airways has expanded since its inauguration and will continue in proportion as the number of new air mail contracts is increased which require flying at night.

Under the Air Commerce Act of 1926, the Secretary of Commerce is charged generally with the encouragement and

regulation of the use of aircraft in commerce, the control to be under the Assistant-Secretary for Aeronautics, appointed by the President. Among other duties prescribed, the Assistant-Secretary will establish and maintain civil airways; operate and maintain beacons, signals, emergency landing fields, radio direction finding facilities, and will encourage such developments as may aid navigation.

Our airways now exceed 25,000 miles, of which approximately one-half are equipped for night flying operations. In addition to equipping the airways with navigational aids, the Aeronautics Branch of the U. S. Department of Commerce supervises the examination and licensing of pilots and aircraft. Approximately 9,400 pilots are now licensed by the Government and over 6,400 planes are in commercial use.

Incidentally, the manufacturing capacity in this country has risen to 7,500 planes per annum for 1929 as compared to about 4,500 planes for 1928. The Aeronautics Branch also includes an information division which collects and disseminates information relative to the industry; an aeronautic research division whose object is the development and improvement of aids to air navigation and the promotion of safety and comfort in flight;



Airway map showing routes which carry passengers, express or mail and the portion equipped with navigational facilities for night flying.

an airport section which directs and coordinates the work of department related to assisting in the selection of and fostering the development of airports; also, the promulgation of airport rating regulations and the rating of airports; an airways mapping section whose important activity is the preparation of maps and charts for air navigation; special research committees who function under the chairmanship of the director of aeronautical development. Committees at the present time are investigating such problems as: (1) automatic sprinklers for hangar protection; (2) standard signal systems for airways; (3) aeronautic radio research.

One of the most important navigational aids for night flying through thick weather, the development of which was supervised by the Bureau of Standards, is the radio beacon. These beacons guide flyers on their courses by means of directional radio transmitters located on the ground, usually placed at



Front view of TAT hangar, Port Columbus, Ohio.

intervals less than 200 miles apart. A radio receiving set on the airplane tuned to the proper wave length produces sounds in the head phones which indicate whether the flyer is on course or to the right or left of it. A visual system of indication employs vibrating reeds placed on the instrument board of the airplane which may be observed by the pilot thus better enabling him to listen for weather reports. Radio beacon sta-

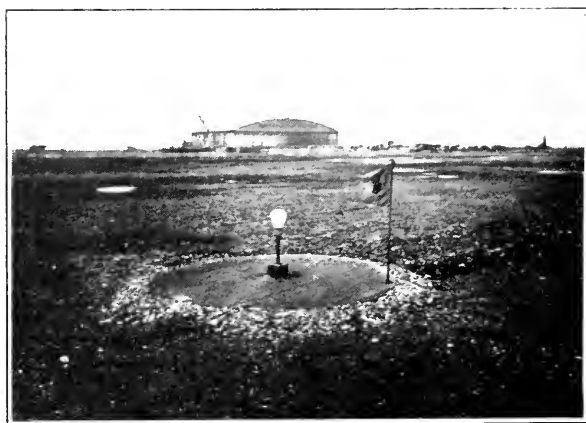
tions have been installed on the airway between Newark, N. J., and Cleveland, which area experiences thick weather to perhaps a greater degree than any other section regularly traversed.

The U. S. Army Air Service has a large research laboratory at Dayton, Ohio, where airplanes, engines, and accessories are being constantly tested and improved. While studies are made primarily for military purposes, a vast amount of data has been accumulated which is valuable to manufacturers of commercial equipment.

The Aeronautics Branch of the Navy Department has been quite active in the design and testing of aircraft for supplementing naval operations. One of their outstanding accomplishments was the development of an airplane carrier suitably equipped to enable airplanes to take off or land on the deck.

The Aeronautic Chamber of Commerce of America, Inc., is an organization composed of airway operators, aircraft manufacturers, and accessory manufacturers with headquarters in New York City. Among its functions are:

- (1) To serve the aviation industry by means of a systematic collection and dissemination of information for the benefit of its members.
- (2) To promote and encourage conferences of its members for the study of problems in hand.
- (3) To supervise and promote aircraft expositions as an aid to publicity and sale of aeronautical equipment.



Boundry marker unit equipped with a 60-watt lamp. These units are spaced at less than 300-foot intervals on the boundaries of a landing field.

The Chamber also maintains a bureau at Washington, D. C., for the purpose of giving information on new patents and bids for aviation equipment purchased by the Government. A year-book which contains statistics on the aeronautical industry is also published for members and may be purchased by the public.

Air-Rail Passenger Transportation

Recently published reports of American air mail and aviation transport lines give some idea of the amazing rate of expansion in this comparatively new field.

Transcontinental Air Transport, since the inauguration of its air-rail service in July, carried 4,346 passengers, over more than two million miles.

Passenger planes, some of which have been operating only since June 14th last, when the Universal Air-Rail Service was inaugurated, carried 20,659 passengers over 2,301,221 miles.

Boeing's air mail loads climbed from 493 tons in 1928 to 906 tons last year. Passenger totals went from 1,963 to 2,850. There were no fatalities in the year.

It is probably true that "air-mindedness begins with the pocket-book." We have recently witnessed a drastic reduction in passenger rates which is a logical procedure for making this mode of travel more popular. The fare between New York and Los Angeles is now \$159.92, lower even than the railroad rates on the fastest trains including Pullmans and extra fares. Admittedly, the rate cut will cause a much heavier traffic over the air line, but the officials of the company hesitate to predict just how much or how fast the increase will be.

Universal Air Lines, operator of the air and rail service known as the Great Circle route, recently offered to business houses a new series of scrip books. These make possible the purchase of air travel at reduced rates equal to rate fare plus Pullman.

The Universal rate from New York to Los Angeles is \$223.51, but at the scrip book rates the price can be as low as \$151.86 for the trip from coast to coast.

The first train-airplane transportation system was inaugurated in this country somewhat over a year ago and consisted of connections with trains of the Pennsylvania, Baltimore & Ohio, New York Central Railroads at Chicago with the Northwest Airways, who operated passenger planes to Minneapolis and St. Paul where train connections may again be had on the

Great Northern, Northern Pacific, and C. M. & St. Paul Railroads to points west.

The Universal Air-Rail Service was inaugurated June 14, 1929. This system provides passenger transportation on the New York Central Railroad from New York City or Boston to Cleveland, Ohio, and thence by airplane to Garden City, Kansas. At this point, passengers may board a train for Denver, Colo., via the Santa Fe Railway or by express train to Los Angeles and San Diego, Cal. Another combination consists of travel by train from New York or Boston to Cleveland and thence by



The exterior of this hangar is illuminated to an average intensity of $2\frac{1}{2}$ -foot candles by means of 200-watt lamps in industrial type reflectors.

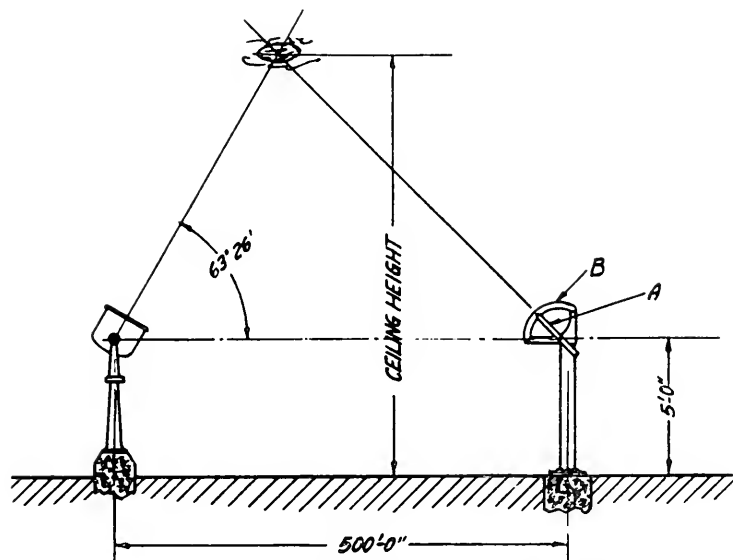
airplane to Tulsa, Okla. At this point, a M. K. & T. train is boarded for Dallas, Texas, where the airplane again serves to transport passengers to Brownsville, Texas. At this point, there is an airplane connection operated by the Mexican Aviation Corporation which transports the passengers to Mexico City.

The Universal Aviation Corporation also operates many other airplanes between principal cities in the middle west which do not necessarily make close connection with train service.

On July 1, 1929, the Trans-Continental Air Transport, Inc., inaugurated their air-rail passenger service from New York City to Los Angeles or San Francisco, Cal. Express trains of the

Pennsylvania Railroad carry passengers overnight from New York City to Columbus, O., where connection is made with airplane service to Waynoka, Okla., making stops at Indianapolis, St. Louis, Kansas City, and Wichita.

A luncheon is served on the airplane between St. Louis and Kansas City. On arrival at Waynoka, a motor coach transports passengers to the station of the AT & SF Railway for overnight travel to Clovis, New Mexico. From this point, another airplane carries the passengers via Albuquerque, Winslow, and Kingman to Los Angeles. A luncheon is served on the airplane between Winslow and Kingman. Upon arrival at Los Angeles, the passengers have their choice of proceeding on a train overnight to San Francisco or flying the next morning airplane on the Maddux Lines. Several other train-plane systems are also in operation, such as that provided by the New York Central Railroad and Western Air Express connecting at Kansas City for coast to coast service and by the Kohler Aviation Corporation which transports passengers from Milwaukee to Grand Rapids by airplane and thence by the Michigan Central Railroad to New York City and intermediate points.



METHOD OF OBTAINING CEILING HEIGHT
Sight through Bar A at beam spot on cloud - Readings on scale B will indicate Ceiling Height in feet.

Method of using projected light to determine cloud height at night.

Air-Rail Systems for Express

Quoting Mr. E. M. Cowie, President of the Railway Express Agency, some idea of the importance of the development of air express may be realized.

"We are interested in commercial aviation not only as a potential source of profit in itself, but for the influence it will have in promoting the expansion of our rail business by opening new markets to all lines of commercial enterprise.

"What we need is planes in regular service with capacity of 20,000 pounds and the ability to carry a pay load of at least five tons. When our air lines are equipped with such units, commercial aviation will follow the course of every other transportation system. That is to say, the profits from the low-volume emergency traffic, including the paper work of business which can pay almost any price, will shrink into insignificance in comparison with those to be obtained from the regular and constantly increasing flow of routine merchandise.

"To get this done we must stop marveling at the little romance of stunt commerce and open our eyes to the colossal drama of American business, which is so big that most of us cannot see it."

There are twelve or more different air lines now delivering express directly to and from some 82 American cities. Approximately, \$25,000,000 worth of small merchandise leaves New York City each day by express instead of by freight because it is three times faster than freight. It is not unreasonable to assume, therefore, that there will be a tremendous increase in the use of air express which is three times faster than the swiftest train. If there is, transportation will not only save interest on money, securities, and goods in transit but will also facilitate the distribution of style merchandise, perishables and all other shipments whose nature demands the highest possible speed of delivery.

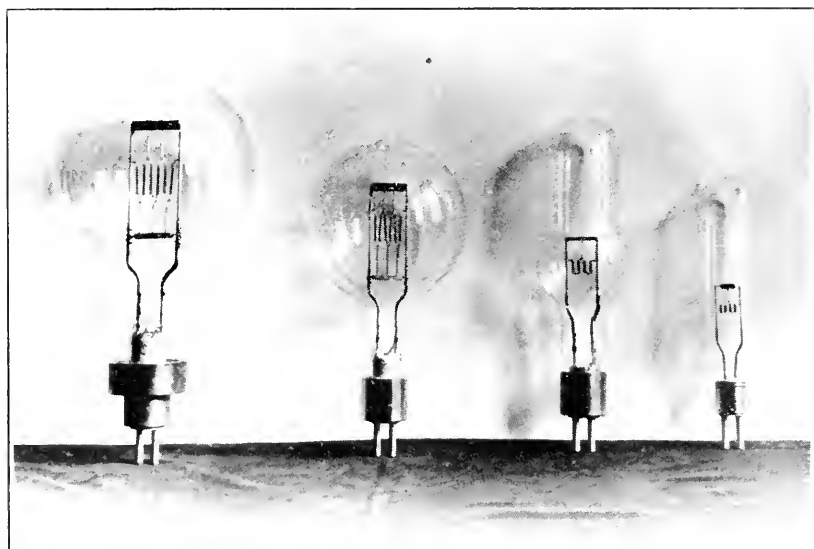
Mr. C. M. Keys, President of the Curtiss-Wright Corporation, makes the following statement:

"It is in the air express service that business and public will find the greatest immediate convenience and practical use. Anything that is light and valuable, such as Paris gowns and hats, or that is small and valuable, such as jewelry, makes ideal air express matter. Today you can buy in New York City cut roses which were nodding on their bushes in the midwest at noon yesterday; in Chicago you can buy a fish which was still

flapping its tail in the brine of the Atlantic as late as the day before."

Air-transport operators now flying an air-express service under contracts with the Railway Express Agency include: Boeing Air Transport, Clifford Ball of Pittsburgh, Continental Air Lines, Embry-Riddle Company, National Air Transport, Northwest Airways, Pacific Air Transport, Robertson Aircraft Corporation, Thompson Aeronautical Corporation, and Western Air Express.

A marked increase in the safety of civil aeronautics in the



Incandescent lamps used for floodlighting landing fields. Left to right: 10,000 watts, 5,000 watts, 3,000 watts and 1,500 watts.

United States for the first six months of 1929 over the same period in the previous year is shown in the semi-annual report of aircraft accidents, made public by Clarence M. Young, Assistant-Secretary of Commerce for Aeronautics.

In scheduled air transport operations for the period of January to June, 1929, the report shows there were 9,201,338 miles flown, with nine fatal accidents reported, the mileage flown for each fatal accident, therefore, being 1,022,311. For the same period of 1928, there were 4,484,612 miles flown and five fatal accidents, the miles a fatal accident being 896,922.

In contrast to 59 per cent of accidents laid to pilot errors, the second largest item was power-plant failure, causing 18.08

per cent of accidents. Airplane structural failures contributed 8.80 per cent and miscellaneous, including weather and darkness, 9.35 per cent.

Night Flying Facilities

Without adequately lighted airways and airports, rapid transportation of express by airplanes connecting with trains would be of limited value. Commercial aviation attains its greatest usefulness through the addition of night schedules since a greater radius of business intercourse is made possible between the end of one business day and the beginning of the next.

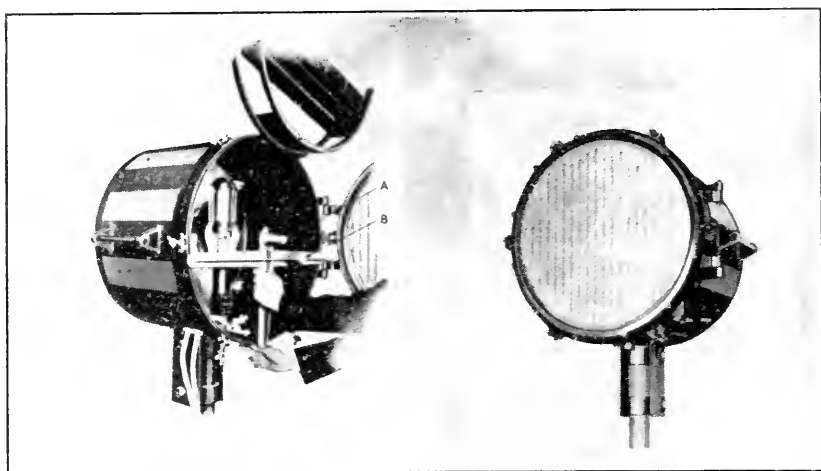
The Airways Division of the Department of Commerce has installed 24-inch revolving beacons at intervals of 10 miles along only those portions of existing routes on which the present schedule demands flying in the dark of early morning and late evening. The only exception to this 10-mile arrangement is at the ends of each route and intermediate airports. The first beacon is placed at a position approximately 20 miles from the terminal field, the second at 40 miles, and at 10-mile intervals thereafter. In the center 10 miles of each of these 20-mile intervals, there are placed four small flashing gas beacons. This combination near the terminals offers an opportunity for comparison under different weather conditions.

The advantages of distinctive flashes are such that the newer beacons now being installed have, in addition to the standard 24-inch rotating beam, two "course" lights. These units are incandescent projectors having from 14-inch to 18-inch parabolic reflectors with 500-watt lamps as light sources. The two units are directed in opposite directions along the airway. A spread lens front door is used on the course unit, which spreads the beam horizontally through an angle of approximately 40 degrees. This beam spread is necessary on account of the latitude which must be allowed to a flyer on an airway, since a pilot seldom flies directly over the beacons. He may be as much as two or three miles to right or left. The revolving beacon carries some form of make and break contactor, so that as it revolves it will make and break the circuit to the course lights, giving them a distinctive flash, synchronized with the beacon flash.

On sections of the airways where electric service is not conveniently available, acetylene flashing beacons are spaced at three-mile intervals. The unit consists essentially of a double

lantern, one mounted above the other. The top lantern is an azimuth and zenith light having a separate flasher, operating at 10 flashes of 500 c. p. per minute. The lower lantern is a course light with a 15-degree horizontal beam spread rated at 5000 c. p. operating at 20 flashes per minute. This type of beacon is quite reliable with its dual lantern and operates without attendance for periods of six months or more.

Emergency landing fields are located at intervals of 30 miles and each is usually equipped with a standard rotating beacon, an illuminated cloth cone wind indicator, and boundary lights on the landing area. The construction and illumination of airports does not come under the jurisdiction of the Depart-



24-inch Chromilite projector designed for use with a 3,000 watt lamp to floodlight aviation landing fields.

ment of Commerce but if certain conditions are complied with, they will be given a definite rating for size, service facilities, and night flying facilities. Airports which are completely equipped receive first consideration for inclusion on contract air mail routes established by the U. S. Post Office Department. The following classified types of lighting are required by the Airport Rating Regulations established by the Department of Commerce:—airport beacon, illuminated wind direction indicator, boundary lights, obstruction lights, building floodlights, ceiling projector, and landing field floodlights.

The requirements of a satisfactory beacon light are adequate candlepower, not less than 100,000 for long range; proper distribution of light in the vertical plane to make the beacon visible all around the horizon and to the zenith, or nearly so,

for altitudes of 500 to 1,000 feet; distinctiveness for identification; luminous periods of not less than 10 per cent; and eclipse periods of not more than ten seconds duration.

There shall be at least one illuminated wind direction indicator, internally or externally lighted, equivalent in effect to the standard wind cone.

The outline of the usable portion of the landing area shall be shown at night by boundary lights spaced not more than 300 feet apart and served by an underground distribution system. Either series or multiple circuits may be used. The units must be weatherproof and white or yellow in color. On mul-



Night view showing an installation of twelve 24-inch Chromilite projectors.

multiple circuits, at least 25-watt lamps shall be used and in series circuits, 6.6 amperes, 600 lumen lamps. Where green lights are installed in the boundary circuit to designate favorable points of approach, 50-watt and 1000 lumen lamps must be used in the multiple and series circuits respectively.

All obstructions on or in the vicinity of the airport shall be clearly marked with red lights of the same wattage or lumen output as the green lights specified for the boundary circuit. Obstruction lights must be waterproof and shall be mounted in each case above the highest point of the obstruction. All tall, isolated obstructions in the vicinity of the airport exceeding 100 feet in height, such as radio towers, flagpoles, trans-

mission towers, chimneys, and water towers shall be marked with at least two red lights placed directly above the obstruction, with one red light, or more, as may be necessary to give visibility in all directions, placed at two-thirds the height of the obstruction. In lieu of such red obstruction lights, chimneys, water towers, and similar structures may be marked by adequate floodlighting.

The exterior surface of each hangar on the airport shall be floodlighted to an average intensity of illumination of at least 2.5 foot-candles. This may be accomplished by a system of at least 200-watt lamps with industrial reflectors mounted about 10 feet above the surface and spaced at 20-foot centers in each direction on the roof and along the eaves and ends of the roof, or by the use of floodlight projectors giving the specified intensity. The exterior surfaces of the hangars, excepting the roof areas used as the background for air markings, shall be of such a color as to reflect not less than 50 per cent of the light, and at least one hangar roof, or other suitable area shall be marked with the name of the city or town and so illuminated as to be visible from an altitude of at least 2,000 feet.

For use as a ceiling projector there is required an incandescent searchlight with a parabolic reflector of not less than 12 inches in diameter, equipped with at least a 250-watt lamp of the concentrated filament type used for spotlight or headlight service, and a stray light shield giving a beam spread of not more than 7 degrees; or equivalent apparatus. In some cases, depending upon local conditions, it may be necessary to use units as large as 24 inches in diameter, fitted with 1,000-watt lamps. The projector shall be mounted on a yoke with a quadrant or other suitable means for elevating and holding the light at the proper angle.

The landing area floodlight system, which may consist of one or more units, shall be such as to provide an even distribution of illumination over the entire usable portion of the landing area. There shall be sufficient intensity of illumination to reveal the details of the surface and make depth perception readily possible from a minimum altitude of 30 feet in the center of the lighted area. The minimum vertical plane intensity of illumination over the usable portion of the landing area shall be not less than .15 foot-candles.*

*Following the presentation of the address above, Mr. Cost showed a large number of pictures on the screen, giving a description with each picture. A few of these are shown by various cuts illustrated.

PRESIDENT: Gentlemen, you have listened to a most interesting talk. Does any one wish to make any remarks at this time?

MR. FRANK J. LANAHAN: I think we have all enjoyed this trip by aeroplane. The scenery was magnificent, the lunch was very good, and thanks to a kind Providence we did not have to use the paper bag. The highly interesting, thoroughly instructive and exceedingly educational presentation of this modern subject by Mr. Cost was surely appreciated by all of us, and I think the least we can do to show our appreciation is to extend to the speaker the compliment of a rising vote of thanks.

The motion was duly seconded and carried by unanimous vote.

PRESIDENT: Mr. Nieman has a couple of distinguished visitors here whom we would like to have him introduce.

MR. CHARLES J. NIEMAN: Last July it was my pleasure and privilege to visit Russia, not only Leningrad but also Moscow. We have with us tonight Mr. Charles Gill, of the Baltimore & Ohio, host to two very distinguished Russian visitors, and on behalf of the Railway Club of Pittsburgh I would like you to give Russia the glad hand tonight, and later, when we have a little more time, I will tell you why the United States did not recognize Russia.

PRESIDENT: Mr. Gill, will you introduce your distinguished guests?

MR. C. A. GILL: Mr. Nieman spoke of two distinguished visitors from Russia. There are more than two in the party, who are making a survey of the railroads of this country and have divided their time between the New York Central, the Pennsylvania, and the Baltimore & Ohio and expect to leave the latter part of this month for the Northern Pacific and probably the Santa Fe.

The object of their visit is to obtain better ideas of the practices now in effect on American Railroads. Tomorrow they plan to visit the Westinghouse Electric & Manufacturing Company and the Westinghouse Air Brake Company plants who have extended to them a very cordial invitation.

Would like to add a few more remarks in connection with the Boilermakers' Convention to be held in May, as I do not

believe the members of the Railway Club of Pittsburgh realize the amount of pressure and amount of time that has been given to bring the convention to Pittsburgh. Pittsburgh is recognized as the "Metal Market" of the world, manufacturing boiler sheets, tubes, stay-bolts, rivets and everything that goes to build locomotive boilers. We should keep in mind that this vast organization of boilermakers maintain between 65,000 and 70,000 locomotives throughout the United States, the locomotive boiler today being one of the most essential parts of a locomotive, and every effort should be made to make the convention, as mentioned, a success.

By virtue of conferences, conventions and improvements made from day to day, a better and more economical type of locomotive boiler has been produced than was ever dreamed of fifteen or twenty years ago. It is quite a coincidence that I was in this same room just twenty years ago, the officers having been called together by the executives for a conference to explain certain conditions that were taking place that were very bad and existed in a general way on all railroads throughout the country. We did not have at that time, the get-together spirit and there was no free exchange of ideas, but rather an atmosphere where a man was somewhat fearful to express his ideas to his superior and others as quite generally they were not looked upon with as much favor as at the present time. The association of Railway Clubs, Air Brake Clubs, Get-together meetings and luncheons have done much to bring about the exchange of ideas across the table and the meeting of individuals as man to man. These conditions are responsible for many of the changes brought about on American Railroads today.

We are now facing, as our very able speakers have demonstrated, the result of airways, the performance of the Transcontinental Air Transport, the Western Air Express, the Mad-dux Company, all of which have connections with steam railroads terminating at some point in the Central West and continuing the trip to the coast. It is, therefore, more important now than ever before that the steam roads give just as adequate service as that of any other mode of transportation in order to make the entire journey more of a success than what might have been termed a comfortable trip of fifteen or twenty years back.

I am quite sure everyone here realizes the good that comes

from a club meeting of this kind and wish to thank you for the opportunity of being with you tonight.

As requested by your Chairman and Mr. Nieman, I wish to introduce Mr. Kiel, representative of the Russian Railroads with headquarters at Moscow, also Mr. Theodore Rogatchoff, who is acting as interpreter.

PRESIDENT: We wish to extend a warm welcome to these gentlemen. We are glad to have them with us tonight.

The hour is late, and unless some one has something to present at this time, we will stand adjourned, and repair to the tables at the other end of the room. Hearing no objection, we are adjourned.

J. D. CONWAY, Secretary.

R E S E R V E D

CAR LIGHTING

COMPLETE EQUIPMENT
ELECTRIC OR GAS



The Safety Car Heating and Lighting Co.

New York Chicago St. Louis Boston Philadelphia San Francisco Montreal

RAILWAY STEEL-SPRING CO.

Springs, Steel Tired Wheels,
Locomotive and Car Wheel Tires.
Pressed Steel Journal Box Lids

GENERAL OFFICE, 30 CHURCH STREET, NEW YORK
BRANCH OFFICES—CHICAGO, ST. LOUIS, ST. PAUL, RICHMOND, DENVER,
SAN FRANCISCO, DALLAS, PITTSBURGH, DETROIT

USED (Service-tested) A. R. A. FREIGHT CAR PARTS

Answering the four questions of chief importance:

QUALITY—Safe as Unused Parts if not actually Safer

QUANTITY-----Substantial Volumes

CONDITION—No more trouble using than Unused Parts

SAVING-----Very Satisfying

Are you receiving our Stock Lists? Write for them and our
interesting proposition.

BRIGGS & TURIVAS, Inc.

**Cars (Retired and Second-Hand) and CAR PARTS
of All Kinds**

Pittsburgh District Address: Imperial, Pa.

Phone: Imperial 132

General Office: Blue Island (Chicago) Illinois.
Plants: Blue Island, Ill. Chicago Heights, Ill.

Pittsburgh, Pa.

Up-to-Date Wheels for Up-to-Date Cars

Wheels that come back for re-conditioning are an unnecessary burden on the shop man. They are out of step with modern railroad operation. Davis "One-Wear" Steel Wheels are truly up-to-date wheels for up-to-date cars. Maximum strength and lightness—secured by a special composition, heat-treated steel—combats wear and guards against re-turning. Long service life is a noteworthy quality of every Davis "One-Wear" Steel Wheel.

AMERICAN STEEL FOUNDRIES

New York

CHICAGO

St. Louis

YOUNGSTOWN

ALL STEEL CORRUGATED FREIGHT CAR DOORS

CAMEL

FREIGHT CAR DOOR FIXTURES

Weather and Burglar Proof

Top or Bottom Supported

CAMEL SALES COMPANY

332 South Michigan Avenue

CHICAGO, ILLINOIS

Pressed Steel Car Co.

MANUFACTURERS OF

FREIGHT and PASSENGER

-:- CARS -:-

CASTINGS

FORGINGS

BOLSTERS

BRAKEBEAMS

TRUCKS

UNDERFRAMES

GREY IRON WHEELS

COMPLETE FACILITIES FOR REPAIRING CARS

OFFICES

New York

Pittsburgh

Chicago

St. Paul

Standard Steel Car Co.

OFFICES

General Offices: Frick Bldg., PITTSBURGH, PA.
 NEW YORK, 170 Broadway
 CHICAGO: Fisher Building

WORKS

Butler, Pa.
 New Castle, Pa.
 Hammond, Ind.

STEEL AND COMPOSITE

FREIGHT CARS

For all Classes of Service, from our Standard Designs,
 or according to Specifications of Purchasers.

Steel Car Underframes

TRUCKS, BOLSTERS, BRAKE BEAMS, ETC.

Capacity 50,000 Cars per Annum INQUIRIES
SOLICITED

Union Steel Casting Company

Pittsburgh, Pa.

Cast Steel Locomotive Frames, Driving Wheel
 Centers, Locomotive Steel Cylinders and
 Miscellaneous Steel Castings

Vanadium, Nickel and other Alloy Steel Castings a
 Specialty

CAR HEATING SPECIALTIES

Use "VAPOR"

Metallic Two-inch Steam Con-
 nections between all Cars.

Automatic Temperature Control
 Vapor System on all Cars.

VAPOR CAR HEATING CO., Inc.

Railway Exchange - Chicago, Ill.

GENERAL REFRACTORIES COMPANY

Home Office
PHILADELPHIA, PA.

Manufacturers of High Grade Fire Brick
For All Railroad Purposes

Locomotive Arch Brick
Direct from Manufacturer to Consumer

Consignment Stocks, Prompt Deliveries
Quality and Service Assured

RAILWAY SALES DEPARTMENT

Graybar Building—420 Lexington Avenue
New York City



H. & K.
Rotating Chair
No. 900.

CHAIR CAR COMFORT IN DAY COACHES

These Luxurious Chairs

—bring to a focus the steady improvement made in Hale & Kilburn car seats during the last half century. The tendency in this development has been constantly towards greater comfort, larger and more commodious seats, softer springs and greater beauty.

Hale & Kilburn Co.

General Offices and Works:
1800 Lehigh Ave., Philadelphia

NATHAN

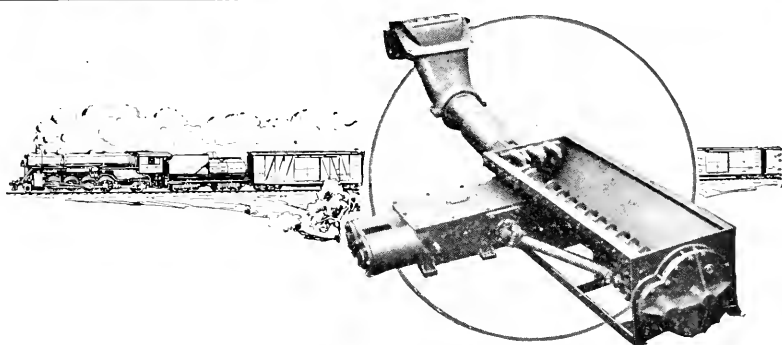
MECHANICAL LUBRICATORS

WATER COLUMNS INJECTORS LUBRICATORS
LOW WATER ALARMS

Locomotive and Stationary Boiler Fittings

NATHAN MANUFACTURING CO., 250 Park Avenue, New York

*Pacific Electric Railway
Main Street Terminal
Los Angeles*



The Only Sound Basis

CONSIDER the locomotive in the broad light of a means of producing transportation.

Viewed in this light, the value of a locomotive to the railroad is measured by its ability to produce maximum gross-ton-miles-per-hour economically.

Stoker fired locomotives haul more tons and at higher speeds because they increase the sustained steam capacity of the locomotive.

The added locomotive earning power resulting from stoker firing justifies stoker application to any locomotives, large or small.

THE STANDARD STOKER COMPANY, Inc.

New York

Erie

Pittsburgh

VULCAN

CRUCIBLE STEEL COMPANY

Established in 1900

ALIQUIPPA, PA.

*Makers of the better grades of Tool Steel, and the
pioneers in the manufacture of high quality
Vanadium Steels.*

KING

METALLIC

for Locomotive Piston
Rods, Valve Stems and
Air Pumps.



PACKINGS

King Sander
Security Latch
King Indestructible Oil Cups
King Hand Boring Lathe
Gollmar Bell Ringer
Leach Sanders

Reg. U. S. Pat. Off.

THE U. S. METALLIC PACKING CO.

PHILADELPHIA, PA.

Milestones of Service

WE ARE passing another milestone, another year of Grip Nut service. Twenty-three years ago, Grip Nuts began serving the railroads.

Inventive genius of a high order, the best mechanical skill, have been continuously concentrated upon a specific problem—keeping bolted parts in place. Thus each succeeding year has been marked by growth—growth toward realization of a service ideal.

The quality of the service rendered by Grip Nuts is attested by their use on the equipment of the majority of Class 1 American railroads.

GRIP NUT COMPANY

5917 South Western Avenue

Chicago, Illinois

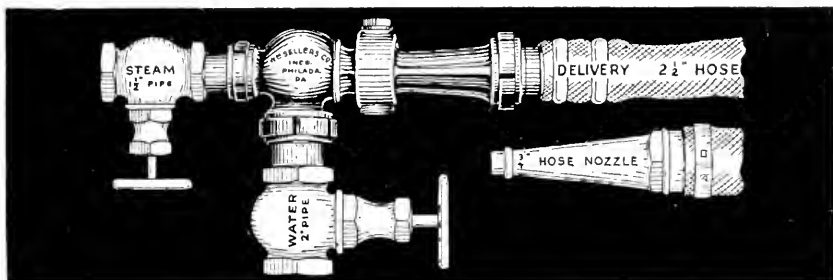
TUCO PRODUCTS CORPORATION

Tuco National Standard Roofing
Tucolith Composition Flooring
Flexolith Composition Flooring
Imperial Car Window Screens
Royal Adjustable Car Window Screens
Universal Car Window Screens
National Standard Steel Trap Doors
Universal Steel Trap Doors
Trap Door Locks and Holders

30 CHURCH STREET
NEW YORK

Resisto Hairfelt Insulation
Tucor Rockwul-Jacket Insulation
Tucork Insulation for Car Floors
Tucor Floor Plate Preservative
Eclipse Deck Sash Ratchets
Steel Car Sheathing, Panels and Slats
Reliance Sash Balances
Perfection Sash Balances
Brown Window Sash Weatherstrips

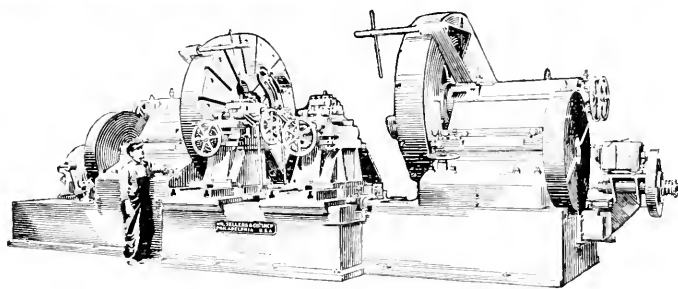
PEOPLES GAS BUILDING
CHICAGO



SELLERS Locomotive Boiler Washer, Filler and Fire Extinguisher

A simple, effective apparatus for Round House installation, designed to wash and fill locomotive boilers with hot water, or for preliminary fire service. Always ready for immediate use.

William Sellers & Co., Incorporated
Injector Dept. Philadelphia, U. S. A.



Railroad Shop Tools

Driving Wheel Lathes	Car Wheel Lathes
Axle Lathes	Driving Box Boring and Facing Mills
Car Wheel Boring Mills	Boring and Turning Mills
Tool Grinders	Drill Grinders

WM. SELLERS & CO., Incorporated

PHILADELPHIA, U. S. A.

BOILER COMPOUNDS

SOOT REMOVER



Buckeye Chemical Co.

Factory and Laboratory:

DETROIT, MICH.

Pittsburgh, Pa.
5621 Wellesley Ave.
Montrcse 1362

Rochester, N. Y.
82 St. Paul St.
Main 3084

Over Thirty Years Serving the Engineer

Donated by A Friend

for welding and cutting



in the railroad shops of Pittsburgh district and thruout the country —
Airco Oxygen—Airco Acetylene—Airco-Davis-Bournonville Welding and Cutting Apparatus—Supplies.

AIR REDUCTION SALES CO.

Pittsburgh— 1116 Ridge Avenue

New York—342 Madison Avenue

**OKONITE (RUBBER) and VARNISHED CAMBRIC
INSULATED WIRES and CABLES**

Manson Tape

THE OKONITE COMPANY

Okonite Tape

Founded 1878

THE OKONITE-CALLENDER CABLE COMPANY, Inc.

Factories: Passaic, N. J. - Paterson, N. J.

Sales Offices:

New York - Chicago - Pittsburgh - St. Louis - Atlanta
Birmingham - San Francisco - Los Angeles - Seattle - Dallas



SUPERHEATERS

DESIGNING ENGINEERS AND MANUFACTURERS
OF ELESKO STEAM SUPERHEATERS FOR
LOCOMOTIVE, MARINE AND STATIONARY
BOILERS



FEED WATER HEATERS, EXHAUST
STEAM INJECTORS AND PYROMETERS
FOR LOCOMOTIVES

17 East 42nd Street
NEW YORK

THE SUPERHEATER COMPANY

Peoples Gas Building
CHICAGO

OFFICIAL PROCEEDINGS RAILWAY CLUB OF PITTSBURGH

\$1.00 Per Year



25¢ Per Copy

Vol. XXIX

FEBRUARY 27, 1930

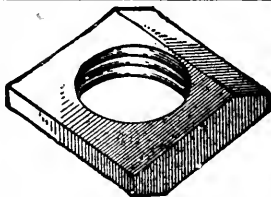
No. 4

"Human Values in the Transportation Industry"

By G. K. ROPER, Senior, Secretary, The National Council of the
Young Men's Christian Associations of the United States
of America, New York City.

Steel Car Forge Company PITTSBURGH, PENNSYLVANIA

FORGINGS



Dieter Lock and Holding Nuts

**STANDARD SAFETY NUT
CORPORATION**

30 CHURCH ST.

NEW YORK

LOX-ON DEVICES CORPORATION

PAUL W. DIETER, President

30 CHURCH STREET

NEW YORK CITY

LEWIS IRON, "The Iron Superior"

Penn Iron & Steel Company, Creighton, Pa.

SOLE SALES AGENTS,

Joseph T. Ryerson & Son, Inc., Chicago, Ill.

OFFICIAL PROCEEDINGS
OF
The Railway Club of Pittsburgh

Organized October 18, 1901

Published monthly, except June, July and August, by The Railway Club of Pittsburgh, J. D. Conway, Secretary, 515 Grandview Ave., Pittsburgh, Pa.

Entered as Second Class Matter February 6, 1915, at the Postoffice at Pittsburgh, under the Act of March 3, 1879.

Vol. XXIX
No. 4

Pittsburgh, Pa., February 27, 1930

\$1.00 Per Year
25c Per Copy



**The Standard
For Accuracy**

Starrett



**Cut Quicker
Last Longer**



**Accurate
Reliable**

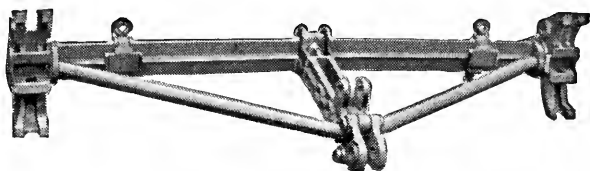
THE L. S. STARRETT CO., ATHOL, MASS., U. S. A.

BRAKE BEAMS

"Solid Truss"
and
Built-Up Types

AND

Brake Beam Supports



DAVIS "SOLID TRUSS" PASSENGER BEAM

ALSO

Pressed Steel Journal Box Lids

DAVIS BRAKE BEAM CO.

JOHNSTOWN, PA.

Sales Office: 418 Sixth Avenue, Pittsburgh, Pa.

GOULD

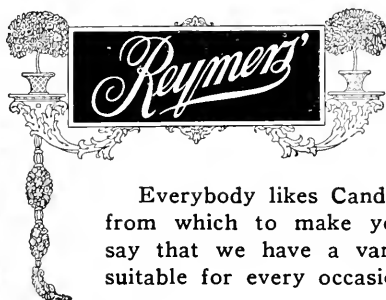
Side Frames Bolsters Couplers
 Passenger and Freight Journal Boxes
 Open Hearth Steel Castings

THE GOULD COUPLER CO.

New York

Works: Depew

Chicago



CANDIES

Everybody likes Candy—with almost a thousand candies from which to make your selection, we can truthfully say that we have a variety to suit every taste—a box suitable for every occasion.

Lacquers
 Varnish
 Enamels
 Oil Colors



REG U S PAT OFF.

Railway and
 Industrial
 Protective
 Coatings

JAMES B. SIPE AND COMPANY
 PITTSBURGH, U. S. A.

The Q & C Company, 90 West St., N. Y. C.

Peoples Gas Building - - Chicago
 Railway Exchange Building - St. Louis

**Manufacturers of Track, Car and Engine
 Specialties**



STUCKI Side Bearings

A. STUCKI COMPANY
OLIVER BUILDING
PITTSBURGH, PA.

Canadian Representative
THE HOLDEN CO., LTD.
Montreal, Canada.

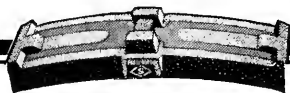
SOUTHERN WHEEL COMPANY

A. R. A. 850 LB.

SINGLE PLATE CHILLED TREAD WHEELS

FOR

70 TON CARS



*Our tests determine the best
shoe for each type of service.*

The American Brake Shoe and Foundry Company

230 Park Ave., New York

332 So. Mich. Ave., Chicago

**The Pocket List of
Railroad Officials**

*Used by the Officers of all Railroads on
The North American Continent*

Issued Quarterly

Subscription Price, \$6.00 per annum

Single Copies, \$2.50

Advertising rates on application

THE OFFICIAL RAILWAY EQUIPMENT REGISTER
ISSUED MONTHLY

Descriptive of freight and passenger cars of the Railways and
Private Car Companies in the United States, Canada and Mexico.

Subscription Price, \$15.00 per annum.

Single Copies, \$2.00.

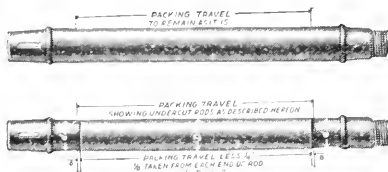
THE RAILWAY EQUIPMENT AND PUBLICATION CO.

J. ALEXANDER BROWN, Vice-President and Manager

424 West 33rd Street

New York

IF WE stated we could sell you the same steel you are now using for your piston rods at half the price you are paying, you would be greatly interested. Well, we can practically do that and make an additional saving of half the cost of labor required in preparing the rod for the engine by undercutting, as illustrated in cut below, instead of grinding or turning the wearing surface. That practice will extend the life of the rod fifty per cent or more. Paxton-Mitchell Metallic Packing will pack its own wear steam-tight until a rod has been reduced one-quarter of an inch. You will also save the cost of one set of packing, one sliding plate and one cone each time engine is in for general repairs.



Half sets of our packing segments may be reclaimed from scrap for use in making at least fifty per cent of renewals due to the four segment combination of our packing.

"The Packing That Packs"

The Paxton-Mitchell Company
OMAHA, NEBRASKA

NATIONAL FRICTION DRAFT GEAR

The Perfect Shock Absorber

Requires No Re-Adjustment

NATIONAL MALLEABLE AND STEEL CASTINGS CO.

General Office — Cleveland, O.

The more than doubled facilities of the new greater Dearborn Laboratories are evidence that an organization grows as it benefits those it serves.

With these new laboratories we offer our customers greater, more rapid and more efficient service in correction of troublesome water conditions.

DEARBORN CHEMICAL COMPANY

310 S. Michigan Avenue, Chicago 205 East 42nd Street, New York
Farmers Bank Bldg., Pittsburgh



SYMINGTON

Malleable Iron and Steel Journal Boxes
for Passenger and Freight Equipment

FARLOW DRAFT ATTACHMENTS

THE SYMINGTON COMPANY

New York Chicago Boston Baltimore Rochester

BALL'S
Varnish Remover

OXOLIN
REGISTERED
THE IDEAL PAINT OIL

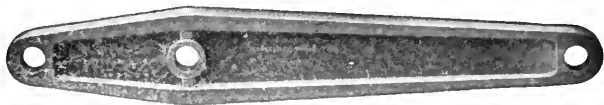
B. C.
Spirits

Ball Chemical Company

CHICAGO Office,
63 W. Van Buren Street.

Fulton Bldg., PITTSBURGH, PA.

Schaefer Drop-Forged Brake Levers



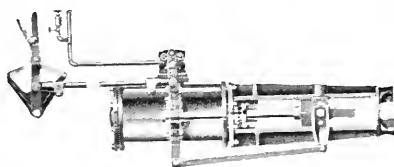
Designed to give uniform stress conditions throughout entire body of lever. Levers are drilled from templets and exact spacing between holes is thus assured.

Drop forging makes all levers uniform.

Lighter in weight with increased strength.

Schaefer Equipment Co.

General Offices: Koppers Bldg., Pittsburgh, Pa.



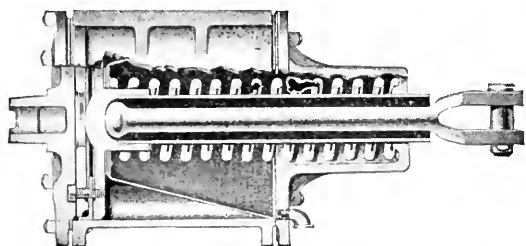
ALCO REVERSE GEAR

THE Alco Reverse Gear was designed to meet the demands of diversified service. While it serves acceptably in heavy freight service, it responds equally well to the needs of high speed passenger requirements. Again, in fast freight, helper and switching service it gives quick and accurate valve gear adjustments. In other words, it meets the conditions imposed in all classes of service—it does not excel in one at the expense of another.

AMERICAN LOCOMOTIVE COMPANY

30 CHURCH STREET

NEW YORK CITY



This New Protector Keeps Cylinders Clean

A collapsible water-proof hood that prevents moisture and dirt from reaching the cylinder walls. Lengthens life of packing cups, reduces leakage, decreases maintenance cost. . . Ask for Circular Notice 1082.

Westinghouse Air Brake Co., Wilmerding, Pa.

From Lamps to Locomotives



The Westinghouse Electric and Mfg. Co. is prepared to take care of your *every* electrical need.

When thinking electrically,
think—

Westinghouse

Grant Building

Pittsburgh, Pa.

Speed—The Present Day Need

No longer is the value of a freight locomotive measured by tractive force alone. Since schedules must be maintained, the importance of ton-miles per hour capacity is being specially considered.

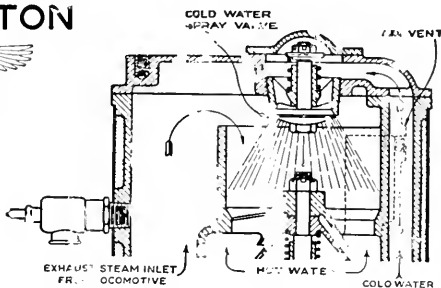
We have recently built for several railroads single expansion, articulated locomotives of exceptionally large ton-miles per hour capacity.

Our services are at the command of any railroad to assist in designing motive power.

The Baldwin Locomotive Works

Philadelphia

WORTHINGTON



The Secret of Worthington Feedwater Heater Efficiency —direct contact of water and exhaust steam

Scale and bad water have no effect on the temperature of feedwater delivered by the OPEN TYPE HEATER.

WORTHINGTON PUMP and MACHINERY CORPORATION

Works: Harrison, N. J. Cincinnati, Ohio. Buffalo, N. Y. Holyoke, Mass.

Executive Offices: 2 Park Avenue, New York, N. Y.

GENERAL OFFICES: HARRISON, N. J.

District Offices in 24 U. S. Cities.

Branch Offices or Representatives in Principal Cities of all Foreign Countries

H-9 F

Factors that Increase Locomotive Effectiveness



The Locomotive **BOOSTER**

Franklin Railway Supply Co., Inc.

17 East Forty-Second Street, New York

Chicago, Ill.

St. Louis, Mo.

San Francisco, Cal.

332 S. Michigan Ave.

Boatmen's Bank Bldg.

774 Monadnock Bldg.

Franklin Railway Supply Company, Limited, Montreal

Export Department—International Railway Supply Co.

30 Church Street, New York

STAYBOLTS FOR ANY BOILER REQUIREMENT

F. B. C. Welded, TATE Threaded,
and Flannery Two-Piece
Flexible Staybolt Assemblages

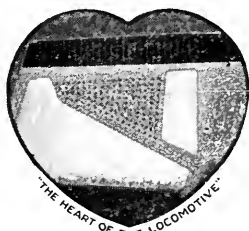
NU-TATE and TELL-TALE Bolts

Crown Stays and Rigid Bolts
(STRAIGHT OR REDUCED BODIES)
Bulletins Describing all Flannery
products mailed upon request.

FLANNERY BOLT CO.

FLANNERY BLDG.

PITTSBURGH, PA.



Nicholson Thermic SYPHONS

Railroad purchases of Thermic Syphons
in January of this year were 50%
greater than any previous month.

LOCOMOTIVE FIREBOX CO.,
310 S. Michigan Ave., Chicago, Ill.

Hunt-Spiller Air Furnace Gun Iron

HAS THE
Strength and Wearing Qualities
THAT ARE ABSOLUTELY NECESSARY IN
LOCOMOTIVE CASTINGS

PRICES MODERATE

Manufactured Only By

RESULTS GREAT

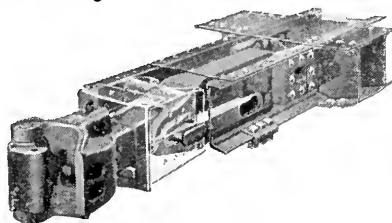
Hunt-Spiller Manfg. Corporation

J. G. PLATT, President and General Manager
OFFICE AND WORKS:
383 DORCHESTER AVENUE
SO. BOSTON, MASS.

V. W. ELLET.
Vice President

The Buckeye Steel Castings Co.

COLUMBUS
NEW YORK
CHICAGO



ST. PAUL
LOUISVILLE
LONDON

“BUCKEYE” Yoke and Draft Attachments

FORT PITT SPRING COMPANY

PITTSBURGH, PA.

SPRINGS BOTH COIL
& ELLIPTIC

For Railroad Service

ALLOY SPRINGS A SPECIALTY

Malleable CASTINGS OF UNIFORM QUALITY ARE PERMANENT

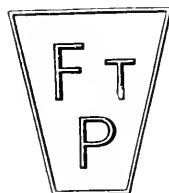
CURRENT AVERAGE TESTS

For 12 Months

910 Consecutive Heats

Tensile Strength, Yield Point Elong. %
Lbs. per sq. in. Lbs. per sq. in. in 2 in.

HIGH	51370	40420	28.1
LOW	56490	37210	22.6
AVERAGE	58344	38494	25.9



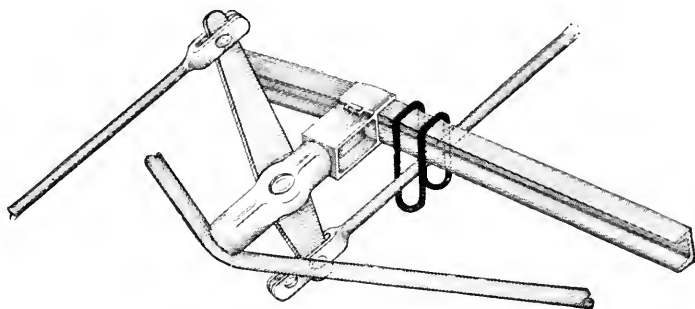
*This Trade-mark is your security on
Railroad Car Castings*

Send Blue Prints for Estimates

Fort Pitt Malleable Iron Company
PITTSBURGH, PA.

INDEX—ADVERTISERS.

NAME	Page	NAME	Page
Air Reduction Sales Co.....	xxiv	Penn Iron & Steel Co.....	Front Cover
American Brake Shoe & Foundry Co.....	iii	The Pocket List of Railroad Officials	iii
American Locomotive Co.....	vi	Pressed Steel Car Co.....	xviii
American Steel Foundries.....	xviii	The Q & C Co.....	ii
Baldwin Locomotive Works....	viii	Railway Equip't. and Publication Company	iii
Ball Chemical Co.....	v	Railway Steel Spring Co.....	xvii
Briggs & Turivas.....	xvii	Reymer & Bros., Inc.....	ii
Buckeye Chemical Co.....	xxiv	Safety Car Heat. & Lighting Co...	xvii
The Buckeye Steel Casting Co.	xi	Schaefer Equipment Co.....	v
Camel Sales Co.....	xviii	Wm. Sellers & Co., Inc.....	xxiii
Chicago Railway Equip. Co.....	xlii	Sipe, James B., & Co.....	ii
Davis Brake Beam Co.....	i	Southern Wheel Co.....	iii
Dearborn Chemical Co.....	iv	Standard Safety Nut Corp. Front	Cover
Flannery Bolt Co.....	x	Standard Steel Car Co.....	xix
Fort Pitt Malleable Iron Co.....	xi	The Standard Stoker Co.....	xxi
Fort Pitt Spring Co.....	xj	The L. S. Starrett Co.....	Inside Front Cover
Franklin Rwy. Supply Co., Inc.	ix	Steel Car Forge Co.....	Front Cover
General Refractories Co.....	xx	Stucki Co., A.....	iii
The Gould Coupler Co.....	ii	The Superheater Co.....	Front Cover
Grip Nut Co.....	xxii	The Symington Co.....	v
Hale & Kilburn Co.....	xx	Tuco Products Corp.....	xxii
Hunt-Spiller Mfg. Corporation	x	Union Spring & Mfg. Co.....	xiv
The Kerite Insulated Wire & Cable Co., Inc.....	xxi	Union Steel Casting Co.....	xix
Locomotive Firebox Co.....	x	U. S. Metallic Packing Co.....	xxii
Lox-On Devices Corp.....	Front Cover	Vapor Car Heating Co., Inc....	xix
Nathan Mfg. Co.....	xx	Vulcan Crucible Steel Co.....	xxii
National Malleable and Steel Castings Co.	iv	Westinghouse Air Brake Co....	vii
The Okonite-Callender Cable Company	Front Cover	Westinghouse Elec. & Mfg. Co.	vii
Paxton-Mitchell Co.	iv	Worthington Pump and Machinery Corporation	ix



LOW COST PROTECTION

Afforded By the

CRECO BOTTOM ROD GUARD

Simply drive it on the brake beam.
It locks in place and cannot rattle.
Positively prevents fallen bottom rods.
Low in price and application cost.

Chicago Railway Equipment Co.

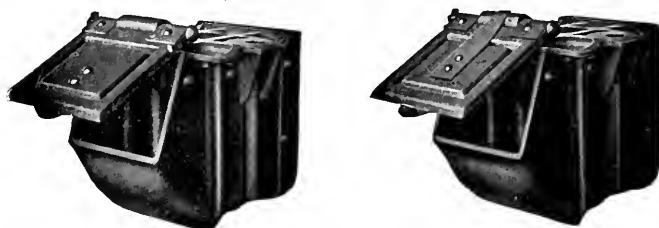
CHICAGO

Union Spring & Manufacturing Co.

RAILROAD SPRINGS

Kensington All Steel Journal Boxes

STEEL CASTINGS



Lightest and Strongest M. C. B.
Journal Boxes Made

WORKS:
NEW KENSINGTON, PA.

PITTSBURGH OFFICE
2001 CLARK BUILDING

NEW YORK	-	-	-	50 Church Street
CHICAGO	-	-	-	Fisher Building
RICHMOND, VA.	-	-	-	Mutual Building
LOUISVILLE, KY.	-	Equitable	Life & Cas. Bldg.	
BALTIMORE, MD.	-	-	Munsey Building	
PHILADELPHIA, PA.	-		226 South 15th Street	

The Railway Club of Pittsburgh

Organized October 18, 1901

Vol. XXIX
No. 4.

Pittsburgh, Pa., February 27, 1930

\$1.00 Per Year
25c Per Copy

OFFICERS FOR 1929-1930

President

E. W. SMITH,

Vice President, The Pennsylvania Railroad,
Pittsburgh, Pa.

First Vice President

PROF. LOUIS E. ENDSLEY,
Consulting Engineer,
Pittsburgh, Pa.

Secretary

J. D. CONWAY,
1841 Oliver Building, Pittsburgh, Pa.

Second Vice President

J. E. HUGHES,
Superintendent, P. & L. E. R. R.,
Pittsburgh, Pa.

Treasurer

E. J. SEARLES,
Manager, Schaefer Equipment Company,
Pittsburgh, Pa.

Executive Committee

FRANK J. LANAHAN, Pres., Fort Pitt Malleable Iron Co., P. O. Box 1054, Pgh., Pa.
A. STUCKI, Engineer, A. Stucki Company, 419 Oliver Bldg., Pittsburgh, Pa.
SAMUEL LYNN, Supt., Rolling Stock, P. & L. E. R. R., McKees Rocks, Pa.
D. F. CRAWFORD, Consulting Engineer, 5243 Ellsworth Avenue, Pittsburgh, Pa.
F. G. MINNICK, General Manager, P. & L. E. R. R., Pittsburgh, Pa.
G. W. WILDIN, Asst. Vice President, Westinghouse Air Brake Co., Wilmerding, Pa.
E. J. DEVANS, General Superintendent, B. R. & P. Ry. Co., Du Bois, Pa.
W. S. McABEE, Vice President, Union Railroad Co., East Pittsburgh, Pa.

Membership Committee

E. A. RAUSCHART, Mechanical Superintendent, Montour Railroad, Coraopolis, Pa.
OTIS R. HALE, Dis. Sales Mgr., American Loco. Co., Farmers Bank Bldg., Pgh., Pa.
T. E. CANNON, Gen. Supt., Locomotives & Equipment, P. & W. Va. Ry., Pittsburgh, Pa.
GUY M. GRAY, Superintendent Motive Power, B. & L. E. R. R., Greenville, Pa.
C. E. PEIFFER, Master Car Builder, B. R. & P. Ry., Du Bois, Pa.
J. S. LANAHAN, Vice President, Fort Pitt Malleable Iron Co., Pittsburgh, Pa.
E. EMERY, Railway Supplies, 304 Oliver Building, Pittsburgh, Pa.
R. M. LONG, Air Brake Inspector & Instructor, P. & L. E. R. R., McKees Rocks, Pa.
DONALD O. MOORE, Mgr. of Traffic Division, Chamber of Commerce, Pittsburgh, Pa.
J. A. RALSTON, Mechanical Engineer, Union Railroad, Frick Bldg. Annex, Pgh., Pa.

Subject Committee

C. O. DAMBACH, Supt., P. & W. Va. Ry. Co., Wabash Bldg., Pittsburgh, Pa.
KARL BERG, Asst. Supt., Motive Power, P. & L. E. R. R., McKees Rocks, Pa.
S. G. DOWN, Vice President, Westinghouse Air Brake Company, Wilmerding, Pa.

Finance Committee

W. C. HANSEN, Sales Engineer, A. Stucki Co., 419 Oliver Bldg., Pittsburgh, Pa.
T. M. BLAKLEY, R. F. of E., Pennsylvania R. R., 101 Emerson Ave., Aspinwall, Pa.
J. H. CARROLL, JR., Freight Traffic Mgr., B. & O. R. R., 821 Oliver Bldg., Pgh., Pa.
W. P. CUNNINGHAM, Supt. Motive Power, Monongahela Ry., 3169 Ashlyn St., Pgh., Pa.
LLOYD SUTHERLAND, General Storekeeper, P. & L. E. R. R., McKees Rocks, Pa.

Entertainment Committee

CHARLES ORCHARD, Special Agent, Traffic Dept., Carnegie Steel Co., Pgh., Pa.
F. M. BROWN, Supt., P. & L. E. R. R., Pittsburgh, Pa.
ROBERT ROGERS, Sales Agent, American Car & Foundry Company, Pittsburgh, Pa.

Reception Committee

O. L. WRIGHT, District Manager, The Duff-Norton Mfg. Co., Pittsburgh, Pa.
CHARLES J. NIEMAN, Secretary & Treasurer, Penn Iron & Steel Co., Creighton, Pa.
GEORGE F. LAURENT, Sales Engineer, Fort Pitt Malleable Iron Co., Pgh., Pa.
A. B. WHITE, Superintendent, B. R. & P. Ry. Co., Punxsutawney, Pa.
F. I. SNYDER, Vice President and General Mgr., B. & L. E. R. R., Pittsburgh, Pa.
COL. H. C. NUTT, Pres. & Gen. Mgr., Monongahela Railway Co., Pittsburgh, Pa.

Past Presidents

*J. H. McCONNELL	October, 1901, to October, 1903
*L. H. TURNER	November, 1903, to October, 1905
F. H. STARK	November, 1905, to October, 1907
*H. W. WATTS	November, 1907, to April, 1908
*D. J. REDDING	November, 1908, to October, 1910
*F. R. McFEATHERS	November, 1910, to October, 1912
A. G. MITCHELL	November, 1912, to October, 1914
*F. M. McNULTY	November, 1914, to October, 1916
J. G. CODE	November, 1916, to October, 1917
*D. M. HOWE	November, 1917, to October, 1918
*J. A. SPIELMANN	November, 1918, to October, 1919
H. H. MAXFIELD	November, 1919, to October, 1920
FRANK J. LANAHAN	November, 1920, to October, 1921
SAMUEL LYNN	November, 1921, to October, 1922
D. F. CRAWFORD	November, 1922, to October, 1923
GEO. D. OGDEN	November, 1923, to October, 1924
A. STUCKI	November, 1924, to October, 1925
F. G. MINNICK	November, 1925, to October, 1926
G. W. WILDIN	November, 1926, to October, 1927
E. J. DEVANS	November, 1927, to October, 1928
W. S. McABEE	November, 1928, to October, 1929

*—Deceased.

*—Deceased. All month. Treasurer of each month except June, July, and August.

PROCEEDINGS OF MEETING

FEBRUARY 27, 1930

The meeting was called to order at the Fort Pitt Hotel at 8.00 o'clock P. M., with Vice-President J. E. Hughes in the chair in the absence of the President.

The following gentlemen registered:

MEMBERS

Adams, W. A.	Cunningham, R. I.
Allison, John	Cunningham, W. P.
Altsman, W. H.	Dambach, C. O.
Armstrong, M. H.	Darrall, William G.
Arnold, J. J.	Davies, James
Ashton, William A.	Davis, C. S.
Baer, Harry L.	Dempsey, P. W.
Bain, Clifford A.	Descamp, J.
Balzer, C. E.	Devans, E. J.
Beam, E. J.	Dobson, F. L.
Beeson, H. L.	Donovan, John
Bednar, Joseph J.	Eagan, D. F.
Berg, Karl	Emery, E.
Berghane, A. L.	Emsheimer, Louis
Blakley, T. M.	En Dean, J. F.
Blumling, Howard J.	Falkner, A. J.
Bonhoff, E. L.	Fendner, W. J.
Borg, J. E.	Fenton, H. H.
Bowler, R. W. E.	Forsberg, R. P.
Byrom, W. Reed	Fowler, J. C.
Callahan, F. J.	Frauenheim, A. M.
Campbell, J. E.	Freshwater, F. H.
Campbell, J. T.	Fults, J. H.
Cannon, T. E.	Geisler, J. J.
Canterbury, L. E.	Glaser, J. P.
Carlson, L. E.	Glessner, G. P.
Carruthers, G. R.	Goda, P. H.
Carson, John	Gordon, George A.
Cogswell, F. R.	Greene, W. F.
Conway, J. D.	Grieve, Robert E.
Cotter, G. L.	Hackett, C. M.
Courtney, H.	Hale, Charles E.
Covert, G. W.	Hamilton, W. H.
Craig, John R.	Harper, G. C.
Crawford, D. F.	Heinlein, George J.
Crenner, J. A.	Holmes, E. H.
Croke, Thomas F.	Hughes, John E.
Crouse, J. M.	Hykes, W. H.
Cruikshank, J. C.	Jones, William J.

Kelly, L. J.
 Ketchpel, Paul A.
 Keys, A. H.
 Klann, Peter B.
 Knox, William J.
 Kummer, Joseph H.
 Lanahan, Frank J.
 Lanahan, J. S.
 Leavers, E. J.
 Lindsay, J. H.
 Lobez, P. L.
 Loeffler, George O.
 Long, R. M.
 Lowe, W. D.
 Lowman, John R.
 Ludgate, B. A.
 Lynn, Samuel
 Meinert, Henry
 Mertz, G. H.
 Meyers, William F.
 Miller, John
 Mills, C. C.
 Misklow, C. J.
 Moyer, Oscar G.
 Muck, Joseph
 Muir, R. Y.
 Myers, R. C.
 McAbee, W. S.
 McCrea, James G.
 McHugh, C. A.
 McIntyre, R. C.
 McKinley, A. J.
 McNamee, W.
 McNelty, A. P.
 Nagel, James
 Norris, J. L.
 O'Leary, J. J.
 Orr, D. K.
 Passino, F. J.
 Posteraro, S. F.
 Pringle, A. D.

Pringle, J. L.
 Pringle, P. V.
 Rankin, B. B.
 Rauschart, E. A.
 Reardon, J. P.
 Richardson, H. R.
 Rumbarger, F. A.
 Sable, A. C.
 Sample, W. E.
 Schultz, Charles N.
 Seiss, W. C.
 Severn, A. B.
 Sharp, H. W.
 Sheets, Harry E.
 Shellenbarger, H. M.
 Shelly, D. L.
 Simons, Philip
 Smith, C. J.
 Smith, R. W.
 Spinning, Charles F.
 Stark, F. H.
 Steen, W. E.
 Stephen, James
 Stevens, L. V.
 Thomas, Theo. T.
 Tipton, G. M.
 Tomasic, N. M., Jr.
 Trautman, Harry J.
 Tucker, John L.
 Tucker, J. W.
 Vandivort, R. E.
 Van Wormer, G. M.
 Warner, Russell H.
 White, A. B.
 Wikander, O. R.
 Wilcox, H. C.
 Winslow, Sidney H.
 Wright, Edward W.
 Wright, O. L.
 Wynne, F. E.
 Young, F. C.

VISITORS

Beach, M.
 Brooks, Charles
 Brooks, Dean L.
 Burnett, J. A.
 Cassidy, David A.
 Challingsworth, W.
 Davies, Benjamin S.
 Eckels, W.

Fisher, Cary S.
 Forger, F. G.
 Gregg, J. J.
 Hehman, J. H.
 Heywood, Albert, Jr.
 Johnston, A. J.
 Kempton, J. W.
 Landis, O. L.

Lewis, R. T.	Pugh, A. J.
Lewis, S. B.	Ramsey, J. P.
Longdon, C. V.	Raymond, A. A.
Murphy, Homer	Reardon, Joseph
Murphy, M. E.	Roper, G. K.
Myers, B. E.	Roth, Walter
McCoy, James M.	Schroeder, S.
McTyier, J. F.	Schrontz, S. B.
Oschman, William	Schubert, C. F.
Parsons, Charles R.	Smith, Sion B.
Powelson, F. W.	Wooten, J. A.

The call of the roll was dispensed with, the record of attendance being obtained through the registration cards.

The reading of the minutes of the last meeting was dispensed with, as they have appeared in printed form and been distributed to the members.

The Secretary read the following list of applications for membership:

Forberg, R. P., Principal Assistant Engineer, P. & L. E. R. R., Terminal Building, Pittsburgh, Pa. Recommended by J. E. Hughes.

Gerber, Harry L., Template Checker, Pressed Steel Car Company, 2739 Merwyn Avenue, Pittsburgh, Pa. Recommended by G. M. Van Wormer.

Lowndes, T. H., Assistant Superintendent, National Bearing Metals Corporation, 928 Shore Avenue, N. S., Pittsburgh, Pa. Recommended by E. A. Rauschart.

Mayer, L. L., Tester, Westinghouse Air Brake Company, 411 Commerce Street, Wilmerding, Pa. Recommended by H. Kondej.

McCoy, James M., Sales Engineer, Lonsdale Manufacturing Company, 735 Franklin Avenue, Wilksburg, Pa. Recommended by W. B. Moir.

Tomasie, Nicholas M., Jr., Locomotive Mechanic, Pennsylvania Railroad, 122 Seventh Street, Turtle Creek, Pa. Recommended by M. R. Semmer.

Sable, A. C., Boiler Maker, Pennsylvania Railroad, 2008 Hampton Street, Swissvale, Pa. Recommended by M. R. Semmer.

CHAIRMAN: These applications will be referred to the Executive Committee, in accordance with our By-Laws, and upon

approval by them the gentlemen named will become members without further action.

SECRETARY: Since our last meeting we have been advised of the death of two of our members. J. H. Redding died February 2, 1930, and J. D. Coleman February 9, 1930.

CHAIRMAN: An appropriate memorial will appear in the next issue of the Proceedings.

Are there any communications?

SECRETARY: In accordance with the action taken at the last meeting arrangements have been made to change the date of the May meeting in order to enable our members to attend the sessions and also the banquet of the Master Boilermakers' Association. Accordingly the meeting of the Railway Club for the month of May will be held on Wednesday, May 21st, instead of Thursday, May 22nd. The Subjects Committee, through its Chairman, Mr. Dambach, is in communication with the speaker for that evening, and it is hoped that he will be able to adjust his schedule to the changed date.

I am happy to announce that the speaker for the April meeting will be Mr. Elisha Lee, of the Pennsylvania Railroad.

CHAIRMAN: Is there any further business? If not, we will proceed with the address of the evening. I consider this Club very highly honored and exceedingly fortunate in being able to secure the speaker who will address you. The subject is one that must appeal to all of us. As Mr. Roper was a son of a railroad man, he will not feel at all embarrassed to talk to the members of a Railway Club. I take great pleasure in introducing to you Mr. G. K. Roper, Senior Secretary, Transportation Department of the National Council of Y. M. C. A's. of the United States of America, New York City. His subject is "Human Values in the Transportation Industry."

"HUMAN VALUES IN THE TRANSPORTATION INDUSTRY"

By G. K. ROPER, Senior Secretary,

The National Council of the Young Men's Christian Associations of the United States of America, New York City.

Mr. Chairman and members of the Pittsburgh Railway Club: Your Chairman has been good enough to say that I was formerly a Railroad employee but such is not actually the case. My father

gave about forty years of his life to the Transportation Industry and I have been connected with it indirectly for the past twenty-five years.

I am reminded of the story of the old section hand who was killed on one of the Southern Railroads. With their usual alacrity, the claim agent soon appeared upon the scene and, knowing the fondness of the colored people for silver money instead of paper, he provided himself with five hundred silver dollars and laid them out on the table before the widow of the man who had been killed, and told her that the Railroad was going to pay her for killing her husband. With some surprise she asked, "You mean that the Railroad Company is goin' to pay me for killin' my husband?" His reply was, "Yes, we are very sorry it happened and we are going to give you all this money. All you have to do is to sign this little slip of paper."

The funeral was held and the money was placed on exhibition for the benefit of the mourners. One old colored man, coming around after the funeral exercises said, "Mandy, you is got a lot of money." "Yes, Uncle Ned," she answered, "I'se got all the money there is in the world, there ain't no more." "Mandy, does you ever think you will get married again?" asked Uncle Ned. "I ain't had time to think about that yet," replied Mandy, "but if I ever do I'se sure it will be a Railroad man."

Transportation can be described as a moving of the necessities and luxuries of life from the places where they are produced to the places where they are most needed. It is of primary importance to American life. The two most important industries are agriculture and transportation and as our life is organized in America today transportation takes equal rank with the production of food stuffs. A generation or two ago men found themselves thrust into different occupations, not by choice but by the necessity of earning a living. Today, with more wealth in the country, a longer period of education, more opportunities furnished to young men to choose their life occupations, a man advances more rapidly, develops his personality more completely and has more permanent contentment if he is engaged in a primary and important industry. Therefore any man connected with the Transportation Industry can justly feel that he has placed his talents where they count, in the sphere of American life.

Secondly,—Transportation is the oldest of all industries. Life develops along parallel lines with the development of the individual. One of the first things a child undertakes to do is to

get from one place to another—to crawl about. It then begins to carry things, and the development of our civilization has been in exact ratio to the development of transportation facilities. One of the most important inventions of the ages was the wheel that turned upon an axle and thereby enabled people to move larger quantities of goods and supplies than they could upon their own backs or in their hands.

As far back as history goes we see very little industrial development except as transportation facilities have developed. Julius Caesar fought the Roman wars two thousand years ago, just before the time of Christ. His facilities consisted of horses and chariots. We come down through the centuries to the time of George Washington and we find that Washington fought the Revolutionary war with the same method of transportation used by Caesar two thousand years before and in all the intervening years life had changed but little. All of our commerces, scientific developments, transmission of people, material and messages, have come within the last hundred years, with the development of steam and electric transportation facilities.

The Transportation Industry is the most exacting of all industries in that it is the most varied and comprehensive. The successful operation of a Railroad embraces within itself virtually all of the other industries. It requires a wider use of human talent than any other specific industry. It requires a perfection of mechanical ability. Its engineering skill must be of the first class. It embraces within its operation chemistry, agriculture and many of the sciences. Its engineering, architectural and construction experts must be equal or better than those of any other industry. Salesmanship is a part of the enterprise. Its traffic men are business getters in much the same fashion that Life Insurance agents come after their business. Its Accounting and Auditing Systems are the best in the land. Because of its wide ramification, the necessity of adhering to rulings of State Corporation Commissions and the Interstate Commerce Commission, it requires a high degree of legal talent. In one of the charts used by us in helping young men to get started in the Railroad profession I listed ninety-seven different main line occupations embraced in the Transportation Industry. Therefore, Railroad management is the successful coordination of a group of experts, each one of whom would be a success in an independent industry. It also deals with the highest of all human sciences—the art of dealing successfully with human beings. This requires more than designated power.

General Foch's statement is pertinent at this time—"Anybody can issue commands but the true test of a commander is his ability to secure loyal co-operation of those under his command." A successful Railroad President, therefore, must embrace within his personality such qualities as character, intelligence, dignity and self-respect, ability to command leadership, physical stamina and unquestioned courage. Wherever you find a successfully operated Railroad you will find among its officers men who possess these qualities, and other things being equal, wherever you find a Railroad in trouble you will find at least some of these qualities lacking in the men who have responsibility for it.

The successful coordination of human effort we call, for the want of a better term—Executive Ability. In its highest sense it is a quality not so common as we think. I wish that time would allow to dwell upon some of the characters in history who have possessed a combination of the qualities outlined above and who have written their names across the pages of the centuries. Julius Caesar, Napoleon, Washington and later down the list, Lee, Roosevelt and Wilson are all characters whom we might assiduously study if our lines of effort take us into the realm of coordinative human effort.

Coincident with the concentration of the small Railroads into large Railroad Systems there developed in this country a peculiar organization, known as the Young Men's Christian Association, a combination Christian, business and welfare organization, with a purpose quite clearly defined, to render service without expectation of reward to all Railroad employes, with a plan of co-operation calling for financial support from employes upon the one hand and management on the other, with a definite program of activities which contribute to physical stamina and strength, widened and increased intelligence and somewhat the spirit of Him who came upon this earth to save men by precept and example and to reveal to themselves their better natures.

Thirdly,—A trained leadership, pursued so assiduously and thoroughly that in the years of its life it has come to be a profession. This organization has expanded to such an extent that there are now in the United States and Canada 240 Railroad Young Men's Christian Association buildings, occupying property valued at \$17,000,000 with a membership of 140,000 Railroad men and it extends its service to thousands of other Railroad men not actually members. It has cared for the needs of Railroad men and the requirements of Railroad Companies at every point where

Railroad Companies have been willing to co-operate. In recent years its work has been extended in two specific directions.—The development of a Health and Recreation program on different Railroad Systems. This work has reached such a degree that on one Railroad System last year—the Chesapeake and Ohio Railway, 22,000 out of a total employed force of 35,000 participated in an organized, continuous fashion in some form of health building exercise. It has promoted seven International and six System Conferences for younger Railroad men between 16 and 21 years of age. These Conferences have had two purposes—

First—By intelligent counsel and group discussion to bring before the young men right ideals of Christian citizenship, the relationship which should exist in the home, the church and the community, high family ideals and understanding of our Government, the privilege we have in being American citizens, etc.

Second—To impress upon these young men the dignity, importance and comprehensiveness of the Transportation Industry as a life work, and it has inspired hundreds of them to study, to increased effort and enlarged ambition and helped them find their right places in this comprehensive and all embracing industry.

In this room we are a group of middle aged and older men. We need only throw our minds back to our own youth in order to see what a tremendous advantage might have been ours had it been our privilege to attend one of these Conferences where the fundamentals were ably discussed under competent leadership. As an example, on one of our Railroads, in one of these group discussions we discovered a young fellow of 18 years working as clerk in the yard master's office. We questioned him as to his home life, his educational equipment, his ambition and as to how he happened to get a position with the Railroad. He stated that he had to leave High School after two years on account of the death of his father and mother, that his ambition was to be a lawyer. We asked him how he expected to achieve that ambition and he hesitatingly replied that he hoped to save enough money to quit working on the Railroad and enter college to study law. We explained to him that at his present rate of salary that would be impossible and he would have to find a way to get his education and work at the same time. The Railroad officer present promised him that if he would go to night High School and complete his High School course he would see what could be done. We followed this young fellow's career through the two years of High School. When he completed his High School course he was

transferred to the offices of the Legal Department at Company headquarters and entered night law school at one of the Universities. He has been following carefully through on this plan and making progress in his position with the Legal Department of the Railroad and in his law studies and will soon be a graduate attorney and will ever have an appreciation for that Railroad officer and a loyalty to that Railroad Company for helping him to achieve his life's ambition.

These Conferences have commanded the attention of right thinking Railroad officers who have been a large factor in their successful development. One particular Railroad, as a result of these Conferences, is following the careers of 650 of its young men, officers are giving them special attention in the matter of their advancement on the Railroad property and their better fitness for their positions, and experienced Railroad Y. M. C. A. Secretaries are counselling them in the vital matters of honor, integrity and right Christian citizenship.

CHAIRMAN: Gentlemen, you have heard a very able address on a most interesting subject. We will be very glad to have any member of the Club, or visitor, make any comments or ask any questions of Mr. Roper pertaining to this subject. I know there are a lot of men here who are interested in this subject, and we should have a very free discussion.

MR. FRANK J. LANAHAHAN: Mr. President, I think it would be fine to hear from you. Everyone knows of your connection with this work, and none of our members are more competent to discuss the merits of the proposition, than you.

MR. J. E. HUGHES: I do not know that I can explain this work any better than my good friend Mr. Roper. I do not know that the Young Men's Christian Association, the Railroad Department, could have selected a man who knows this subject any better than he does. In the last seven years I have been interested, with my associates on the Pittsburgh & Lake Erie Railroad, in trying to do something for the apprentice boys on our lines. I did not have the privilege that a lot of our boys have today, that of securing an education, or in receiving help from anybody to get along. My first attempt at this work was in Pittsburgh about four years ago, through our dear old friend the late Mr. L. H. Turner, who was President of this Club a good many years ago. I was selected by Mr. Turner to talk to a group of boys at a Boys' Conference out at East Liberty. I did not know what to do or what to say.

But I got eight or ten boys together from different parts of the country, and looked over the blanks that had been provided by the Association in which they were asked to answer questions as Mr. Roper has told you. It was a problem to me what to say to these boys. Some of them wanted to be locomotive engineers, master mechanics, train despatchers, almost all the vocations that go with railroad life. I derived a great deal of pleasure in associating with these boys for possibly an hour and a half, and I am glad to say I have a few of those boys on my staff today. They are all getting along fine, and they are trying to get what they went after.

I do not know that we ever had a subject of this kind before this Club. What I was exceedingly anxious to do, as I told Mr. Dambach, Chairman of the Subjects Committee, was to have somebody tell you that we do have men on the railroads who are looking after the interests of the boys. On the Pittsburgh & Lake Erie we have what is known as the Arab Club, American Railway Employed Boys Club. We have about thirty-three members, and it would do you good to attend some of the meetings these boys have. They run their own affairs, with the help of such men as Samuel Lynn, Karl Berg, Harry Richardson, and the Chief of our Police Department, Mr. Toussaint, who go there just to see what the boys do, and occasionally if they are a little short in their finances a way is found to help these boys out. Frequently Mr. Berg, Asst. Supt. Motive Power, will arrange a trip for all these boys Saturday afternoon, to Westinghouse or to the Locomotive Works or to some industry in which the majority of the boys would be interested in connection with the work they are doing at the shops in McKees Rocks.

I am glad to be able to have Mr. Roper here tonight. I might say that Mr. Roper is accompanied by quite a number of the local Secretaries, from the Pennsylvania, the B. R. & P., and Pittsburgh & Lake Erie and other roads and we could profitably continue this meeting for quite a long time by hearing what these men do each day in connection with railroad work. I do not want to prolong the meeting but we would like to hear from some of our railroad officers. Mr. D. K. Orr, would you say something?

MR. D. K. ORR: It would take more courage than I am possessed of for one who comes from the sticks to attempt to say anything to a learned audience like this. But having been called on, I must say that this address of Mr. Roper is a wonderful ex-

position of what the Young Men's Christian Association is doing for the railroad men today.

I have a very heavy cold, and I am afraid if I were to undertake to make any extended remarks they might be misconstrued, like the fellow who had a cold and his voice was almost entirely gone and he thought he ought to see a doctor. So he went down to the Doctor's office and pulled the bell and the Doctor's wife came to the door. He said, "Is the Doctor in?" And she said "No, come on in."

CHAIRMAN: Mr. Dobson, of the Pennsylvania.

MR. F. L. DOBSON: I am sorry I can not tell you a funny story. I did not come here to make a speech. In fact this is the first meeting of the Railway Club of Pittsburgh which I have attended as a regular member. I have been very much interested in Mr. Roper's talk and very much interested to know what wonderful work they have been doing. I thank you.

CHAIRMAN: Mr. McAbee, Union R. R.?

MR. W. S. McABEE: Mr. President, there isn't anything I want to say other than to say that I have been the guest of your Chairman a number of times and before the evening was over I always knew what they were doing in the Young Men's Christian Association on the Lake Erie. The Y. M. C. A. has in Mr. Hughes one of the most enthusiastic boosters that I know of in this district.

CHAIRMAN: Mr. Karl Berg, can you tell us how we do this on the P. & L. E.?

MR. KARL BERG: Mr. Chairman, I do not think I can add anything to what has already been said. As far as I am personally concerned, I think I should be very modest about making any definite statement. I am getting my eyes opened more and more every day relative to the possibilities that lie within the efforts of the organization known as the Railroad Young Men's Christian Association. I am in the same position as the boys themselves—I am just learning; and I think perhaps that is true of many railroad officers today. In the past, possibly they did not realize what they did have. I think it is true that the organization activities that have been explained here offer great possibilities for the future railroad man, and the young boys we talk about are,

after all, the men of the future who may on account of these activities be able to do things much better than we are doing them today.

CHAIRMAN: Mr. Stark, may we hear from you?

MR. F. H. STARK: Mr. President, I would not want to take up the valuable time of this audience after the splendid address we have heard tonight. I am sure it is an encouragement to all the young men to take an interest in the Association work if they have an opportunity. I have been a member of the Young Men's Christian Association for thirty years. I was director of our local association, and when I was on the P. & L. E. Mr. Turner drafted me and it was a delight to work with my friend Brooks and others.

There is one thing we have got to face in the future, and that is what the boys are going to do with their spare time, their leisure hours. I happened to say in the barber shop one time that we would soon be working only four or five hours a day, and the barber said we would all go to the devil fast. I said, "No, the next generation will be developed and trained to utilize their talents in some worthwhile line of endeavor." They will take an interest in books and in legitimate pleasures, and in the course of time they will utilize their leisure in a profitable way. I am reminded of how difficult it is for some of the fellows to keep abreast of the times. A great many men feel that nothing is done as well as it used to be done. I am very thankful to be able to adjust myself and appreciate and realize that the work of the railroad man today is so far in advance of me that I am glad to acknowledge it. Now that I do not have very much else to do I am trying to devote a little of my time in passing along something that will help the younger fellows. I remember when I first came here. Mr. Turner took an interest in me and he would come back and say "Frank, I wish you would make a motion." That was about all I could do in those days. But with the encouragement of the officers of the Railway Club and of other organizations I found it possible to develop from a green farmer boy to one who could at least get up at the mention of his name. There is the selfish side to it. If the young men will do just the little things that present themselves from day to day they will be given something a little bit larger and they will develop and it will be a wonderful help toward their future accomplishment. I am always glad to be with you railroad boys even though I am a retired railroad man. I thank you.

CHAIRMAN: Mr. Brooks, from Youngstown, Ohio.

MR. DEAN L. BROOKS: Mr. Hughes, I can not talk when I am looking at the backs of my friends. With your permission I will come up front where I can see them. The greatest thing in life of course is the human being. They tell a story of a man who was noted for his ability to cut down expenses and his ability as an executive to get men to work; this man died. At the funeral as the six bearers were carrying him out he rose up in the casket and said, "Friends, do not be alarmed, I will get right back where i belong. But I was just thinking that if you had a little cart to put the casket on, one man could wheel it and you could lay off five men."

Laying off men and saving expense is not everything in this world. As I see it, the Young Men's Christian Association, in its contact with railroad men and boys, has one of the greatest opportunities for service. It is a Christian educational institution, and I believe it is of more value than we realize in building men for corporations and in training young men for their positions. Corporations do have souls. Some one said they did not, but they do. And I believe we can in some way form contacts in business life between these boys and the men in their corporations that will be of great value to life itself.

In the institution I represent I have been checking up as I sat here. We have fifteen boys clubs. Not all of those boys are sons of railroad people or employees, but there is a contact formed between various little communities and the railroad company which is very helpful and forms a very happy and profitable reaction toward industry and toward corporations. And I think in trying to train young men spiritually and mentally and physically for their tasks and in fitting those boys for their proper places in life we are doing a great service.

CHAIRMAN: Mr. Crawford, may we hear from you?

MR. D. F. CRAWFORD: Mr. President and Gentlemen, there are many kinds of engineers and many kinds of engineering. It would seem that in material work we can do almost anything. Perhaps the most neglected part of our duty is what by a long stretch of the vocabulary might be termed as human engineering, in other words to give more attention to the human element. I may give Mr. Roper the benefit of a quotation from address of Mr. J. F. Deems, then of the New York Central Lines, to the

American Railway Master Mechanics Association in 1908, as follows:

"We have inherited; what shall we bequeath? What shall we leave to aid in solving the problems of the future, many of which will be more perplexing than those we are called upon to solve today? We may work in brass or steel, and leave the most perfect mechanism; we may develop and improve and evolve methods or practices until nothing more can be desired; we may reach perfection in all these, in mechanism, structure and method, and yet our bequest be a failure and itself a burden unless we provide that which is paramount, which is over and above the sum total of all this, and for which even today events throughout the world are crying aloud—the man. A man prepared, experienced, earnest, hopeful and happy; consecrated to his work and ready to the hand of the future. . . . Our own future, and the hope of that large future which lies beyond, depends on our efforts and our success in providing those who are to help us today, and upon whom at no distant day must fall our duties, our opportunities, our honors and our families. Have we any greater, grander, more sublime obligation than this? Can we justify a pride in our life-work if we fail in this?"

This is to the effect that the only important job for a railroad officer is to realize his responsibility to the men that are working with him, and his responsibility for the influence of himself and his associates upon the young citizens growing up with him.

The proposition given to us by Mr. Roper to my mind promises splendid results. I say that from a little personal experience. I once had the pleasure of a very large title without very much work. I was Director of the Railroad Engineering course in the University of Pittsburgh and I had a class of five young men, seniors. Those five young men met with me once each week to discuss railroad problems. Incidentally they discussed their personal problems, and I found the same sort of reaction between those young men as that which has been so effectively described to you here. I believe the most beneficial work can be done and apparently is being done by the gentlemen who addressed us and I certainly want to congratulate them on the results they have gained so far and to wish them God speed in carrying it on.

CHAIRMAN: Mr. Devans, General Superintendent, B. R. & P.

MR. E. J. DEVANS: Mr. President, Mr. Stark has something on me. This Railway Club and other clubs have done something for him they did not do for me. He said they gave to him the faculty of expression, or in railroad parlance "the gift of gab." If I had that gift tonight, in view of what Mr. Roper has said I believe it would require Will Rogers to get me off my feet in order to give the other fellows half a show. I was very glad to meet Mr. Roper, never having met him before. I am half sorry that I did meet him. I am half sorry I heard what he said. He did not attempt any oratory, he did not attempt to talk us off our feet, but what he has done to me is this: He has given me something to think about, and I do not like to do that.

Mr. Brooks spoke about the railroad officials giving the railroad Y. M. C. A's a chance to develop and help to grow. I hope you do. I might say that our Y. M. C. A. Secretaries are really a department of the Operating Department of the railroad. I believe there isn't any railroad official today who does not realize that he is simply an employee in a particular line of work and appreciates and takes an active interest in railroad Y. M. C. A. work. But I am wondering, and I make the application personal, if our interest is not more passive than really active. And the thought Mr. Roper has left with me is that maybe I had better wake up and *do* a little more and *talk* less.

CHAIRMAN: Mr. Lanahan, what are you thinking about it?

MR. FRANK J. LANAHAN: Mr. President, as most of the members know of my Celtic origin, some of them might come to the conclusion that it was a case of the wrong pew, if in the right church, but such an assumption I think a little later, I can demonstrate to be wrong, but first let me follow the lead of the distinguished speaker in relating a story. As a preface, let it be said that it was not a meeting of the Young Men's Christian Association, but a gathering of modern females. They were being addressed by an unmarried lady who was impressing upon their minds the proper method of treating husbands, advocating for the male partners of the matrimonial alliance the same consideration that they received as boys from their Mothers. As a climax to her dissertation, she absolutely promised that any woman who would mother her husband would enjoy a happy married life. Concluding, she asked if there was among her audience, any who had been impressed by the soundness of the argument, they would please stand. In response to the invitation, a hard visaged, skinny,

undersized woman in the rear of the room was the only one in the audience to arise. Quite evident was it that the speaker was disappointed at the lack of approval of her theory to raise husbands, but nevertheless she asked the "half-pint" who had stood, to come forward, and said she was glad her remarks had made an impression on at least one of her listeners. Affectionately patting the little lady, she asked that she tell the dissentors in the audience just what portion of the talk had impressed her and had her decide to go home and Mother her husband. In excited tones, the tiny woman shouted "Mother," "Why I thought you said 'Smother'."

The hope is here expressed that none of the Railway Club members will take seriously this "smother story," thereby counter-acting the good effects of the lesson that has been so amply portrayed by the previous speaker. I for one, have thoroughly enjoyed Mr. Roper's talk. It is along the lines of what is a popular subject among thinking men of the day. It is the same message, though not always delivered in the same delightful manner, as given to us tonight, that the Boy Scouts are hearing in their numerous gatherings. It is to gain the same effect that work is being done in numerous Boys' Clubs. Within the past three days, it was my good fortune to speak to the student body of the McKees Rocks High School. The context was akin to Mr. Roper's views expressed to us this evening. Last Friday evening, Troops 42, 46 and 51 of the Boy Scouts, belonging to St. Paul's Cathedral, of which I am a member, were given a dinner, and every speech was much the same thought as has been given us tonight. At different times it has been my pleasure to speak at St. Joseph's Protectory to the little audience who have passed from the Orphan Asylum, but are not old enough "to paddle their own canoe" in industrial life, and consequently require some adult guidance. Invariably has the subject embraced those principles and reasons that have been laid before us tonight.

Now why do I mention this? It is the hope to bring home the message not only to get the corporations to advance the necessary money for this work, which I think they will do, for I agree that corporations *do* have souls, but I am making an appeal to the individual to participate personally in this activity. It is all right to look to the other fellow, but what are you doing to develop the future citizens of the country of which we all are so proud? As the twig is bent, so the tree inclines. Do not forget, "as you sow a thought, you reap an act, sow an act you reap a habit, sow a habit, you reap a character, sow a character, you

reap a destiny." As we love our country appreciating what it has done for us, we certainly in gratitude ought to pass on to the younger generation, such help to enable them to reach the maximum of accomplishment.

If you could but realize the joy that comes from personal contact in this character of work, I am sure there is no one who would not in some degree espouse it. Just to have one of these little youngsters, Boy Scout age, adopt you as his hero and look to you for guidance, and at times snuggle up against you, pouring forth his whole soul interest to you as his big brother—there is nothing in the world that quite takes its place.

Mr. President, I could talk on this subject all night. But from the best exponents of the work you have heard the subject covered in a most interesting way, to which I could add nothing by repetition. The speaker has a delightfully well modulated voice and a wonderfully broad vocabulary, so that he has been able to put his thought across most effectively. And I think we have all enjoyed it and I am sure we would all like to have him come back again. And, Mr. Chairman, in order that he may have a visible evidence of our appreciation, both of the speaker and the subject which he has so delightfully presented I would move that a rising vote of thanks be tendered him.

The motion was duly seconded and prevailed by unanimous vote. There being no further business, the meeting was duly adjourned to the refreshment tables.

During the evening the Club was most delightfully entertained by the Pullman Quartette, a quartette of Pullman porters, who sang beautifully a number of songs which they alone could properly present, and at the close of the meeting a special vote of thanks was extended to them in expression of the appreciation of the Railway Club for their splendid entertainment.

J. D. CONWAY, Secretary.

In Memoriam

J. H. REDDING

Died February 2, 1930

J. D. COLEMAN

Died February 9, 1930

R E S E R V E D

CAR LIGHTING

COMPLETE EQUIPMENT
ELECTRIC OR GAS



The Safety Car Heating and Lighting Co.

New York Chicago St. Louis Boston Philadelphia San Francisco Montreal

RAILWAY STEEL-SPRING CO.

Springs, Steel Tired Wheels,
Locomotive and Car Wheel Tires.
Pressed Steel Journal Box Lids

GENERAL OFFICE, 30 CHURCH STREET, NEW YORK
BRANCH OFFICES—CHICAGO, ST. LOUIS, ST. PAUL, RICHMOND, DENVER,
SAN FRANCISCO, DALLAS, PITTSBURGH, DETROIT, CLEVELAND

USED (Service-tested) A. R. A. FREIGHT CAR PARTS

Answering the four questions of chief importance:

QUALITY—Safe as Unused Parts if not actually Safer

QUANTITY-----Substantial Volumes

CONDITION—No more trouble using than Unused Parts

SAVING-----Very Satisfying

Are you receiving our Stock Lists? Write for them and our
interesting proposition.

BRIGGS & TURIVAS, Inc.

**Cars (Retired and Second-Hand) and CAR PARTS
of All Kinds**

Pittsburgh District Address: Imperial, Pa.

Phone: Imperial 132

General Office: Blue Island (Chicago) Illinois.

Plants: Blue Island, Ill.

Chicago Heights, Ill.

Pittsburgh, Pa.

Roller Bearings Applied Without Truck Changes

By means of the American Steel Foundries Roller Bearing Unit any piece of rolling stock can be given the benefit of roller bearings.

The roller bearing is mounted within the hub of the wheel, utilizing an accepted method of applying this type of bearing.

Roll out the plain bearing wheels and axle, then roll in the American Steel Foundries Unit. No additional burdens are placed on maintenance men.

AMERICAN STEEL FOUNDRIES

New York

CHICAGO

St. Louis

YOUNGSTOWN

ALL STEEL CORRUGATED FREIGHT CAR DOORS

CAMEL

FREIGHT CAR DOOR FIXTURES

Weather and Burglar Proof

Top or Bottom Supported

CAMEL SALES COMPANY

332 South Michigan Avenue

CHICAGO, ILLINOIS

Pressed Steel Car Co.

MANUFACTURERS OF

FREIGHT and PASSENGER

-:- CARS -:-

CASTINGS

FORGINGS

BOLSTERS

BRAKEBEAMS

TRUCKS

UNDERFRAMES

GREY IRON WHEELS

COMPLETE FACILITIES FOR REPAIRING CARS

OFFICES

New York

Pittsburgh

Chicago

St. Paul

Standard Steel Car Co.

OFFICES

General Offices: Frick Bldg., PITTSBURGH, PA.
NEW YORK, 170 Broadway
CHICAGO: Fisher Building

WORKS

Butler, Pa.
New Castle, Pa.
Hammond, Ind.

STEEL AND COMPOSITE

FREIGHT CARS

For all Classes of Service, from our Standard Designs,
or according to Specifications of Purchasers.

Steel Car Underframes

TRUCKS, BOLSTERS, BRAKE BEAMS, ETC.

Capacity 50,000 Cars per Annum INQUIRIES
SOLICITED

Union Steel Casting Company

Pittsburgh, Pa.

Cast Steel Locomotive Frames, Driving Wheel
Centers, Locomotive Steel Cylinders and
Miscellaneous Steel Castings

Vanadium, Nickel and other Alloy Steel Castings a
Specialty

CAR HEATING SPECIALTIES

Use "VAPOR"

Metallic Two-inch Steam Con-
nections between all Cars.

Automatic Temperature Control
Vapor System on all Cars.

VAPOR CAR HEATING CO., Inc.

Railway Exchange - Chicago, Ill.

GENERAL REFRACTORIES COMPANY

Home Office
PHILADELPHIA, PA.

Manufacturers of High Grade Fire Brick
For All Railroad Purposes

Locomotive Arch Brick
Direct from Manufacturer to Consumer

Consignment Stocks, Prompt Deliveries
Quality and Service Assured

RAILWAY SALES DEPARTMENT

Graybar Building—420 Lexington Avenue
New York City



H. & K.
Double Rotating Chair
No. 900

CHAIR CAR COMFORT IN DAY COACHES

These Luxurious Chairs

—bring to a focus the steady improvement made in Hale & Kilburn car seats during the last half century. The tendency in this development has been constantly towards greater comfort, larger and more commodious seats, softer springs and greater beauty.

Hale & Kilburn Co.

General Offices and Works:
1800 Lehigh Ave., Philadelphia

NATHAN

MECHANICAL LUBRICATORS
WATER COLUMNS INJECTORS LUBRICATORS
LOW WATER ALARMS

Locomotive and Stationary Boiler Fittings
NATHAN MANUFACTURING CO., 250 Park Avenue, New York

From the Early Period
of the Telegraph to the present
remarkable development in the field of Electricity

KERITE

has been continuously demonstrating the fact that it is the most reliable and permanent insulation known

KERITE INSULATED WIRE & CABLE COMPANY

NEW YORK



CHICAGO

Performance!



CONSIDER the locomotive in the broad light of a means of producing transportation.

Viewed in this light, the value of a locomotive to the railroad is measured by its ability to produce maximum gross-ton-miles-per-hour economically.

Stoker fired locomotives haul more tons and at higher speeds because they increase the sustained steam capacity of the locomotive.

The added locomotive earning power resulting from stoker firing justifies stoker application to any locomotives, large or small.

THE STANDARD STOKER COMPANY, Inc.

New York

Erie

Pittsburgh

VULCAN

CRUCIBLE STEEL COMPANY

Established in 1900

ALIQUIPPA, PA.

*Makers of the better grades of Tool Steel, and the
pioneers in the manufacture of high quality
Vanadium Steels.*

KING

METALLIC

for Locomotive Piston
Rods, Valve Stems and
Air Pumps.



PACKINGS

King Sander
Security Latch
King Indestructible Oil Cups
King Hand Boring Lathe
Gollmar Bell Ringer
Leach Sanders

Reg. U. S. Pat. Off.

THE U. S. METALLIC PACKING CO.

PHILADELPHIA, PA.

Just Enough

"How long should a man's legs be?" Abraham Lincoln wrote a perfect specification: "Just long enough to reach the ground."

How much lock should a Grip Nut have? Just enough to withstand all service strains—and stay locked.

More than "just enough" lock means *unnecessary* labor in application.

Eighteen years of painstaking research, rigid tests, and satisfactory service on 82% of the Class 1 railroads, support the claim that Grip Nuts have "just enough" lock.

GRIP NUT COMPANY

5917 South Western Avenue

Chicago, Illinois

TUCO PRODUCTS CORPORATION

Tucolith Composition Flooring
Flexolith Composition Flooring
Royal Adjustable Car Window Screens
National Standard Steel Trap Doors
Universal Steel Trap Doors
Trap Door Locks and Holders
Tuco National Standard & Traction Roofing
Tuco Specially Treated Cab Curtain
Material
Tucodur Plates

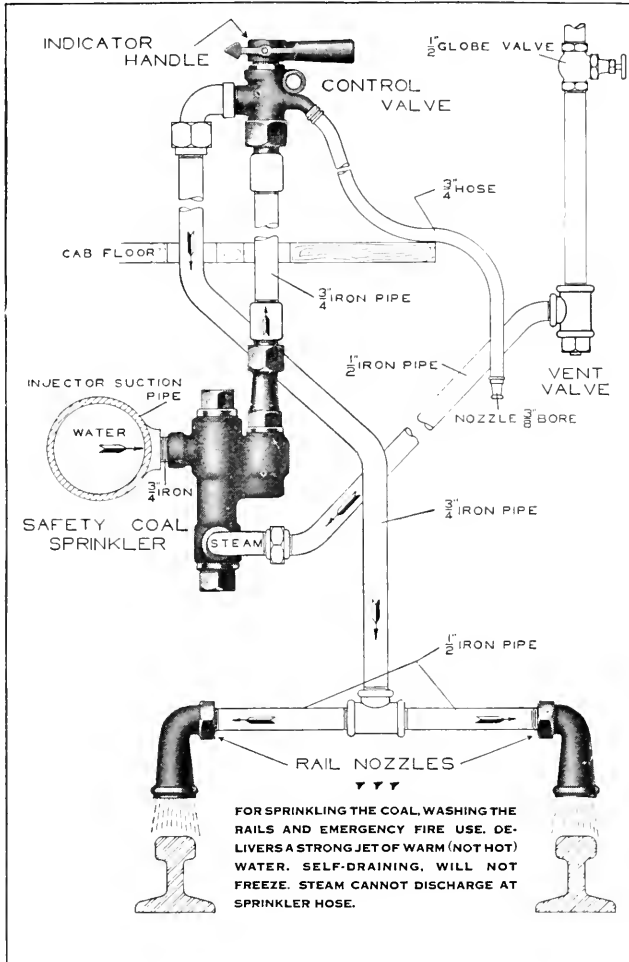
30 Church Street,
New York

Tuco Long Wear Floor Dressing
Resisto Hairfelt Insulation
Tuco Rockwul-Jacket Insulation
Tucork Insulation for Car Floors
Tuco Floor Plate Preservative
Eclipse Deck Sash Ratchets
Steel Car Sheathing, Panels and Slats
Reliance Sash Balances
Perfection Sash Balances
Brown Window Sash Weatherstrips

Railway Exchange Building,
Chicago

The SELLERS

SAFETY COAL SPRINKLER AND RAIL WASHER



RAILROAD SHOP TOOLS

Driving Wheel Lathes—Car Wheel Lathes—Axle Lathes—
Driving Box Boring and Facing Mills—Car Wheel Boring
Mills—Boring and Turning Mills—Planers—Tool Grinders—
Drill Grinders, etc.

WM. SELLERS & CO., Incorporated
Philadelphia, Pa.

BOILER COMPOUNDS

SOOT REMOVER



Buckeye Chemical Co.

Factory and Laboratory:

DETROIT, MICH.

Pittsburgh, Pa.
5621 Wellesley Ave.
Montrose 1362

Rochester, N. Y.
82 St. Paul St.
Main 3084

Over Thirty Years Serving the Engineer

Donated by A Friend

for welding and cutting



in the railroad shops of Pittsburgh district and thruout the country —
 Airco Oxygen—Airco Acetylene—Airco-Davis-Bournonville Welding and Cutting Apparatus—Supplies.

AIR REDUCTION SALES CO.

Pittsburgh—1116 Ridge Avenue

New York—342 Madison Avenue

**OKONITE (RUBBER) and VARNISHED CAMBRIC
INSULATED WIRES and CABLES**

Manson Tape

THE OKONITE COMPANY

Okonite Tape

Founded 1878

THE OKONITE-CALLENDER CABLE COMPANY, Inc.

Factories: Passaic, N. J. - Paterson, N. J.

Sales Offices:

New York - Chicago - Pittsburgh - St. Louis - Atlanta
Birmingham - San Francisco - Los Angeles - Seattle - Dallas



SUPERHEATERS

DESIGNING ENGINEERS AND MANUFACTURERS
OF ELESKO STEAM SUPERHEATERS FOR
LOCOMOTIVE, MARINE AND STATIONARY
BOILERS



FEED WATER HEATERS, EXHAUST
STEAM INJECTORS AND PYROMETERS
FOR LOCOMOTIVES

17 East 42nd Street
NEW YORK

THE SUPERHEATER COMPANY

Peoples Gas Building
CHICAGO

OFFICIAL PROCEEDINGS

RAILWAY CLUB OF PITTSBURGH

\$1.00 Per Year

25¢ Per Copy

Vol. XXIX

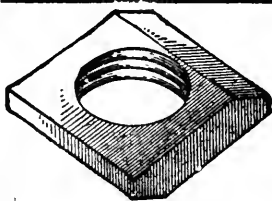
MARCH 27, 1930

No. 5

Some of the Foundation Stones Upon Which a
Successful American Railroad Is Built
By R. P. FORSBERG, Principal Assistant Engineer,
The Pittsburgh & Lake Erie Railroad Company, Pittsburgh, Pa.

Steel Car Forge Company PITTSBURGH, PENNSYLVANIA

FORGINGS



Dieter Lock and Holding Nuts

**STANDARD SAFETY NUT
CORPORATION**

30 CHURCH ST.

NEW YORK

LOX-ON DEVICES CORPORATION

PAUL W. DIETER, President

30 CHURCH STREET

NEW YORK CITY

LEWIS IRON, "The Iron Superior"

Penn Iron & Steel Company, Creighton, Pa.

SOLE SALES AGENTS,

Joseph T. Ryerson & Son, Inc., Chicago, Ill.

OFFICIAL PROCEEDINGS
OF
The Railway Club of Pittsburgh

Organized October 18, 1901

Published monthly, except June, July and August, by The Railway Club of Pittsburgh, J. D. Conway, Secretary, 515 Grandview Ave., Pittsburgh, Pa.
Entered as Second Class Matter February 6, 1915, at the Postoffice at Pittsburgh, under the Act of March 3, 1879.

Vol. XXIX
No. 5.

Pittsburgh, Pa., March 27, 1930

\$1.00 Per Year
25c Per Copy

Starrett



The Standard
For Accuracy



Cut Quicker
Last Longer



Accurate
Reliable

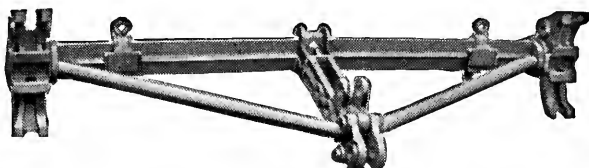
THE L. S. STARRETT CO., ATHOL, MASS., U. S. A.

BRAKE BEAMS

"Solid Truss"
and
Built-Up Types

AND

Brake Beam Supports



DAVIS "SOLID TRUSS" PASSENGER BEAM

ALSO

Pressed Steel Journal Box Lids

DAVIS BRAKE BEAM CO.

JOHNSTOWN, PA.

Sales Office: 418 Sixth Avenue, Pittsburgh, Pa.

GOULD

Side Frames Bolsters Couplers
 Passenger and Freight Journal Boxes
 Open Hearth Steel Castings

THE GOULD COUPLER CO.

New York

Works: Depew

Chicago



CANDIES

Everybody likes Candy—with almost a thousand candies from which to make your selection, we can truthfully say that we have a variety to suit every taste—a box suitable for every occasion.

Lacquers
 Varnish
 Enamels
 Oil Colors



REG U S PAT OFF.

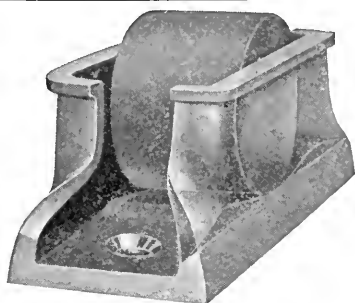
Railway and
 Industrial
 Protective
 Coatings

JAMES B. SIPE AND COMPANY
 PITTSBURGH, U. S. A.

The Q & C Company, 90 West St., N. Y. C.

Peoples Gas Building - - Chicago
 Railway Exchange Building - St. Louis

**Manufacturers of Track, Car and Engine
 Specialties**



STUCKI Side Bearings

A. STUCKI COMPANY
OLIVER BUILDING
PITTSBURGH, PA.

Canadian Representative
THE HOLDEN CO., LTD.
Montreal, Canada.

SINGLE PLATE CHILLED TREAD WHEELS

With

Reinforced Flanges for the Most Severe Service
Over 500,000 in Service

SOUTHERN WHEEL COMPANY



*Our tests determine the best
shoe for each type of service.*

The American Brake Shoe and Foundry Company

230 Park Ave., New York

332 So. Mich. Ave., Chicago

The Pocket List of Railroad Officials

*Used by the Officers of all Railroads on
The North American Continent*

Issued Quarterly

Subscription Price, \$6.00 per annum

Single Copies, \$2.50

Advertising rates on application

THE OFFICIAL RAILWAY EQUIPMENT REGISTER ISSUED MONTHLY

Descriptive of freight and passenger cars of the Railways and
Private Car Companies in the United States, Canada and Mexico.

Subscription Price, \$15.00 per annum.

Single Copies, \$2.00.

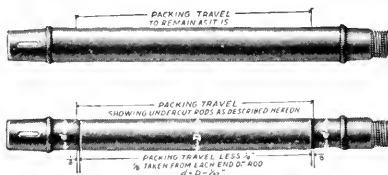
THE RAILWAY EQUIPMENT AND PUBLICATION CO.

J. ALEXANDER BROWN, Vice-President and Manager

424 West 33rd Street

New York

IF WE stated we could sell you the same steel you are now using for your piston rods at half the price you are paying, you would be greatly interested. Well, we can practically do that and make an additional saving of half the cost of labor required in preparing the rod for the engine by undercutting, as illustrated in cut below, instead of grinding or turning the wearing surface. That practice will extend the life of the rod fifty per cent or more. Paxton-Mitchell Metallic Packing will pack its own wear steam-tight until a rod has been reduced one-quarter of an inch. You will also save the cost of one set of packing, one sliding plate and one cone each time engine is in for general repairs.



Half sets of our packing segments may be reclaimed from scrap for use in making at least fifty per cent of renewals due to the four segment combination of our packing, which practically reduces the cost of making the renewals one-half.

"The Packing That Packs"

The Paxton-Mitchell Company
OMAHA, NEBRASKA

NATIONAL FRICTION DRAFT GEAR

The Perfect Shock Absorber

Requires No Re-Adjustment

NATIONAL MALLEABLE AND STEEL CASTINGS CO.

General Office — **Cleveland, O.**

All modern engineering experience justifies our early-conceived standard of complete analysis and exact scientific methods in correcting troublesome water conditions. Dearborn Treatment and Dearborn Treating Plants effect a combination for this purpose that cannot be surpassed in economy and effectiveness.

DEARBORN CHEMICAL COMPANY

310 S. Michigan Avenue, Chicago 205 East 42nd Street, New York
 Farmers Bank Bldg., Pittsburgh



SYMINGTON

Malleable Iron and Steel Journal Boxes
for Passenger and Freight Equipment

FARLOW DRAFT ATTACHMENTS

THE SYMINGTON COMPANY

New York Chicago Boston Baltimore Rochester

BALL'S
Varnish Remover

OXOLIN
REGISTERED
THE IDEAL PAINT OIL

B. C.
Spirits

Ball Chemical Company

CHICAGO Office,
63 W. Van Buren Street. Fulton Bldg., PITTSBURGH, PA.

Schaefer Drop-Forged Brake Levers



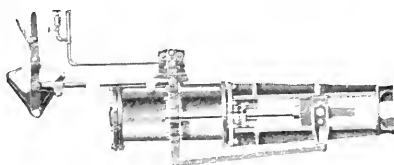
Designed to give uniform stress conditions throughout entire body of lever. Levers are drilled from templates and exact spacing between holes is thus assured.

Drop forging makes all levers uniform.

Lighter in weight with increased strength.

Schaefer Equipment Co.

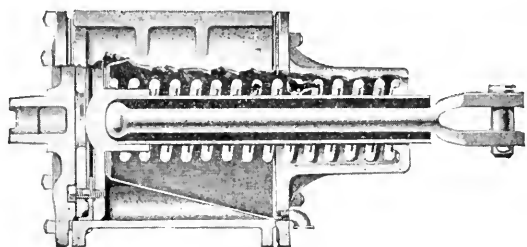
General Offices: Koppers Bldg., Pittsburgh, Pa.



ALCO REVERSE GEAR

THE Alco Reverse Gear was designed to meet the demands of diversified service. While it serves acceptably in heavy freight service, it responds equally well to the needs of high speed passenger requirements. Again, in fast freight, helper and switching service it gives quick and accurate valve gear adjustments. In other words, it meets the conditions imposed in all classes of service—it does not excel in one at the expense of another.

AMERICAN LOCOMOTIVE COMPANY
30 CHURCH STREET NEW YORK CITY



This New Protector Keeps Cylinders Clean

A collapsible water-proof hood that prevents moisture and dirt from reaching the cylinder walls. Lengthens life of packing cups, reduces leakage, decreases maintenance cost. . . Ask for Circular Notice 1082.

Westinghouse Air Brake Co., Wilmerding, Pa.

From Lamps to Locomotives



The Westinghouse Electric and Mfg. Co. is prepared to take care of your *every* electrical need.

When thinking electrically,
think—

Westinghouse

Grant Building

Pittsburgh, Pa.

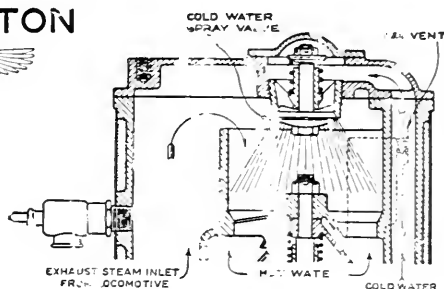
Locomotives to Meet Present Day Requirements

Traffic requirements on the railroads today demand a new type of locomotive—one that combines hauling power and speed to an unusual degree, and that is suitable for making long runs and developing high power on a minimum consumption of fuel and water.

We are prepared to meet the requirements of any railroad for power of this character.

THE BALDWIN LOCOMOTIVE WORKS
PHILADELPHIA

WORTHINGTON



The Secret of Worthington Feedwater Heater Efficiency —direct contact of water and exhaust steam

Scale and bad water have no effect on the temperature of feedwater delivered by the OPEN TYPE HEATER.

WORTHINGTON PUMP and MACHINERY CORPORATION

Works: Harrison, N. J. Cincinnati, Ohio. Buffalo, N. Y. Holyoke, Mass.

Executive Offices: 2 Park Avenue, New York, N. Y.

GENERAL OFFICES: HARRISON, N. J.

District Offices in 24 U. S. Cities.

Branch Offices or Representatives in Principal Cities of all Foreign Countries

H-9 F

Factors that Increase Locomotive Effectiveness



The Locomotive BOOSTER

Franklin Railway Supply Co., Inc.

17 East Forty-Second Street, New York

Chicago, Ill.	St. Louis, Mo.	San Francisco, Cal.
332 S. Michigan Ave.	Boatmen's Bank Bldg.	774 Monadnock Bldg.
Franklin Railway Supply Company, Limited, Montreal		
Export Department—International Railway Supply Co.		
30 Church Street, New York		

STAYBOLTS FOR ANY BOILER REQUIREMENT

F. B. C. Welded, TATE Threaded,
and Flannery Two-Piece
Flexible Staybolt Assemblages

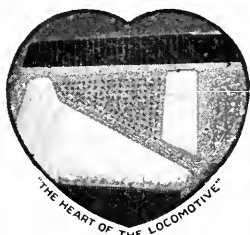
NU-TATE and TELL-TALE Bolts

Crown Stays and Rigid Bolts
(STRAIGHT OR REDUCED BODIES)
Bulletins Describing all Flannery
products mailed upon request.

FLANNERY BOLT CO.

FLANNERY BLDG.

PITTSBURGH, PA.



Nicholson Thermic SYPHONS

Use Thermic Syphons in securing the greatest
possible additional firebox heating surface and
circulation.

LOCOMOTIVE FIREBOX CO.,
310 S. Michigan Ave., Chicago, Ill.

Hunt-Spiller Air Furnace Gun Iron

HAS THE
Strength and Wearing Qualities
THAT ARE ABSOLUTELY NECESSARY IN
LOCOMOTIVE CASTINGS

PRICES MODERATE

RESULTS GREAT

Manufactured Only By

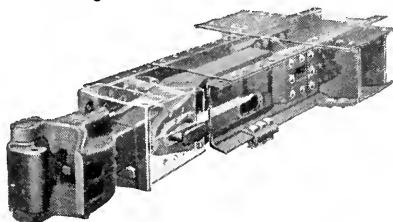
Hunt-Spiller Manfg. Corporation

J. G. PLATT, President and General Manager
OFFICE AND WORKS:
383 DORCHESTER AVENUE
SO. BOSTON, MASS.

V. W. ELLET.
Vice President

The Buckeye Steel Castings Co.

COLUMBUS
NEW YORK
CHICAGO



ST. PAUL
LOUISVILLE
LONDON

“BUCKEYE” Yoke and Draft Attachments

FORT PITT SPRING COMPANY

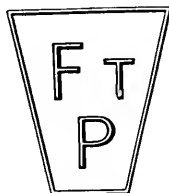
PITTSBURGH, PA.

SPRINGS BOTH COIL
& ELLIPTIC

For Railroad Service

ALLOY SPRINGS A SPECIALTY

Malleable CASTINGS OF UNIFORM QUALITY ARE PERMANENT



CURRENT AVERAGE TESTS

For 12 Months

910 Consecutive Heats

	Tensile Strength. Lbs. per sq. in.	Yield Point Lbs. per sq. in.	Elong. % in 2 in.
HIGH	61370	40420	28.1
LOW	56490	37210	22.6
AVERAGE	58344	38494	25.9

*This Trade-mark is your security on
Railroad Car Castings*

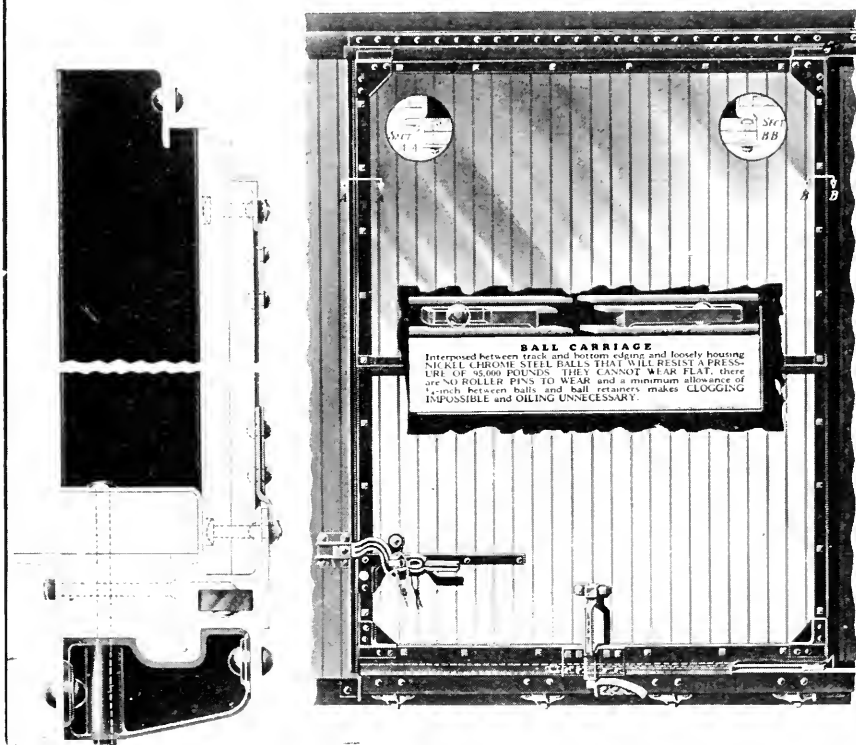
Send Blue Prints for Estimates

Fort Pitt Malleable Iron Company
PITTSBURGH, PA.

INDEX—ADVERTISERS.

NAME	Page	NAME	Page
Air Reduction Sales Co.....	xxiv	Penn Iron & Steel Co.....Front	Cover
American Brake Shoe & Foundry Co.....	iii	The Pocket List of Railroad Officials	iii
American Locomotive Co.....	vi	Pressed Steel Car Co.....	xviii
American Steel Foundries.....	xviii	The Q & C Co.....	ii
Baldwin Locomotive Works....	viii	Railway Equip't. and Publication Company	iii
Ball Chemical Co.....	v	Railway Steel Spring Co.....	xvii
Briggs & Turivas.....	xvii	Reymer & Bros., Inc.....	ii
Buckeye Chemical Co.....	xxiv	Safety Car Heat. & Lighting Co....	xvii
The Buckeye Steel Casting Co.	xi	Schaefer Equipment Co.....	v
Camel Sales Co.....	xviii	Wm. Sellers & Co., Inc.....	xxiii
Chicago Railway Equip. Co.....	xiii	Sipe, James B., & Co.....	ii
Davis Brake Beam Co.....	i	Southern Wheel Co.....	iii
Dearborn Chemical Co.....	iv	Standard Safety Nut Corp. Front	Cover
Flannery Bolt Co.....	x	Standard Steel Car Co.....	xix
Fort Pitt Malleable Iron Co....	xi	The Standard Stoker Co.....	xxi
Fort Pitt Spring Co.....	xi	The L. S. Starrett Co...Inside Front	Cover
Franklin Rwy. Supply Co., Inc.	ix	Steel Car Forge Co.....Front	Cover
General Refractories Co.....	xx	Stucki Co., A.....	iii
The Gould Coupler Co.....	ii	The Superheater Co.....Front	Cover
Grip Nut Co.....	xxii	The Symington Co.....	v
Hale & Kilburn Co.....	xx	Tuco Products Corp.....	xxii
Hunt-Spiller Mfg. Corporation	x	Union Spring & Mfg. Co.....	xiv
The Kerite Insulated Wire & Cable Co., Inc.....	xxi	Union Steel Casting Co.....	xix
Locomotive Firebox Co.....	x	U. S. Metallic Packing Co.....	xxii
Lox-On Devices Corp.....Front	Cover	Vapor Car Heating Co., Inc....	xix
Nathan Mfg. Co.....	xx	Vulcan Crucible Steel Co.....	xxii
National Malleable and Steel Castings Co.	iv	Westinghouse Air Brake Co.....	vii
The Okonite-Callender Cable Company	Front	Westinghouse Elec. & Mfg. Co.	vii
Paxton-Mitchell Co.....	iv	Worthington Pump and Machinery Corporation	ix

THE BALL BEARING CAR DOOR



It Eliminates

FRICTION

DAMAGED GUIDES

FLATTENED ROLLERS

NECESSITY OF OILING

PILFERING

BROKEN HANGERS

WEAR OF ROLLER PINS

"BUTTING" IN TRANSIT

SNOW AND ICE FROM THE TRACK

UNSATISFACTORY OPERATION DUE TO INACCURATE MACHINING

UNSATISFACTORY OPERATION DUE TO CORROSION

MANUFACTURED and SOLD

IN BOTH TOP HUNG AND BOTTOM SUPPORTED TYPES BY THE

CHICAGO RAILWAY EQUIPMENT COMPANY

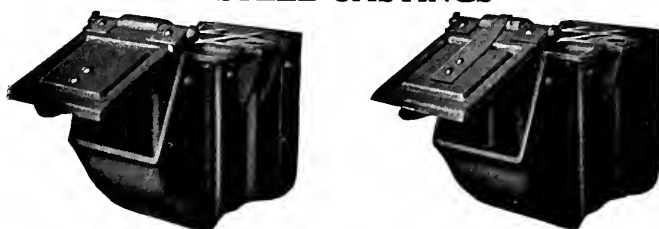
CHICAGO, ILLINOIS

Union Spring & Manufacturing Co.

RAILROAD SPRINGS

Kensington All Steel Journal Boxes

STEEL CASTINGS



Lightest and Strongest M. C. B.
Journal Boxes Made

WORKS:
NEW KENSINGTON, PA.

PITTSBURGH OFFICE
2001 CLARK BUILDING

NEW YORK	-	-	-	50 Church Street
CHICAGO	-	-	-	Fisher Building
RICHMOND, VA.	-	-	-	Mutual Building
LOUISVILLE, KY.	-	-	-	Equitable Life & Cas. Bldg.
BALTIMORE, MD.	-	-	-	Munsey Building
PHILADELPHIA, PA.	-	-	-	226 South 15th Street

OFFICIAL PROCEEDINGS OF The Railway Club of Pittsburgh

Organized October 18, 1901

Vol. XXIX
No. 5.

Pittsburgh, Pa., March 27, 1930

\$1.00 Per Year
25c Per Copy

OFFICERS FOR 1929-1930

President E. W. SMITH, Vice President, The Pennsylvania Railroad, Pittsburgh, Pa.		Secretary J. D. CONWAY, 1841 Oliver Building, Pittsburgh, Pa.
First Vice President PROF. LOUIS E. ENDSLEY, Consulting Engineer, Pittsburgh, Pa.	Treasurer E. J. SEARLES, Manager, Schaefer Equipment Company, Pittsburgh, Pa.	
Second Vice President J. E. HUGHES, Superintendent, P. & L. E. R. R., Pittsburgh, Pa.		

Executive Committee

FRANK J. LANAHAN, Pres., Fort Pitt Malleable Iron Co., P. O. Box 1054, Pgh., Pa.
A. STUCKI, Engineer, A. Stucki Company, 419 Oliver Bldg., Pittsburgh, Pa.
SAMUEL LYNN, Supt., Rolling Stock, P. & L. E. R. R., McKees Rocks, Pa.
D. F. CRAWFORD, Consulting Engineer, 5243 Ellsworth Avenue, Pittsburgh, Pa.
F. G. MINNICK, General Manager, P. & L. E. R. R., Pittsburgh, Pa.
G. W. WILDIN, Asst. Vice President, Westinghouse Air Brake Co., Wilmerding, Pa.
E. J. DEVANS, General Superintendent, B. R. & P. Ry. Co., Du Bois, Pa.
W. S. McABEE, Vice President, Union Railroad Co., East Pittsburgh, Pa.

Membership Committee

E. A. RAUSCHART, Mechanical Superintendent, Montour Railroad, Coraopolis, Pa.
OTIS R. HALE, Dis. Sales Mgr., American Loco. Co., Farmers Bank Bldg., Pgh., Pa.
T. E. CANNON, Gen. Supt., Locos. & Equipment, P. & W. Va. Ry., Pittsburgh, Pa.
GUY M. GRAY, Superintendent Motive Power, B. & L. E. R. R., Greenville, Pa.
C. E. PEIFFER, Master Car Builder, B. R. & P. Ry., Du Bois, Pa.
J. S. LANAHAN, Vice President, Fort Pitt Malleable Iron Co., Pittsburgh, Pa.
E. EMERY, Railway Supplies, 304 Oliver Building, Pittsburgh, Pa.
R. M. LONG, Air Brake Inspector & Instructor, P. & L. E. R. R., McKees Rocks, Pa.
DONALD O. MOORE, Mgr. of Traffic Division, Chamber of Commerce, Pittsburgh, Pa.
J. A. RALSTON, Mechanical Engineer, Union Railroad, Frick Bldg. Annex, Pgh., Pa.

Subject Committee

C. O. DAMBACH, Supt., P. & W. Va. Ry. Co., Wabash Bldg., Pittsburgh, Pa.
KARL BERG, Asst. Supt., Motive Power, P. & L. E. R. R., McKees Rocks, Pa.
S. G. DOWN, Vice President, Westinghouse Air Brake Company, Wilmerding, Pa.

Finance Committee

W. C. HANSEN, Sales Engineer, A. Stucki Co., 419 Oliver Bldg., Pittsburgh, Pa.
T. M. BLAKLEY, R. F. of E., Pennsylvania R. R., 101 Emerson Ave., Aspinwall, Pa.
J. H. CARROLL, JR., Freight Traffic Mgr., B. & O. R. R., 821 Oliver Bldg., Pgh., Pa.
W. P. CUNNINGHAM, Supt. Motive Power, Monongahela Ry., 3169 Ashlyn St., Pgh., Pa.
LLOYD SUTHERLAND, General Storekeeper, P. & L. E. R. R., McKees Rocks, Pa.

Entertainment Committee

CHARLES ORCHARD, Special Agent, Traffic Dept., Carnegie Steel Co., Pgh., Pa.
F. M. BROWN, Supt., P. & L. E. R. R., Pittsburgh, Pa.
ROBERT ROGERS, Sales Agent, American Car & Foundry Company, Pittsburgh, Pa.

Reception Committee

O. L. WRIGHT, District Manager, The Duff-Norton Mfg. Co., Pittsburgh, Pa.
CHARLES J. NIEMAN, Secretary & Treasurer, Penn Iron & Steel Co., Creighton, Pa.
GEORGE F. LAURENT, Sales Engineer, Fort Pitt Malleable Iron Co., Pgh., Pa.
A. B. WHITE, Superintendent, B. R. & P. Ry. Co., Punxsutawney, Pa.
F. I. SNYDER, Vice President and General Mgr., B. & L. E. R. R., Pittsburgh, Pa.
COL. H. C. NUTT, Pres. & Gen. Mgr., Monongahela Railway Co., Pittsburgh, Pa.

Past Presidents

*J. H. McCONNELL.....	October, 1901, to October, 1903
*L. H. TURNER.....	November, 1903, to October, 1905
F. H. STARK.....	November, 1905, to October, 1907
*H. W. WATTS.....	November, 1907, to April, 1908
*D. J. REDDING.....	November, 1908, to October, 1910
*F. R. McFEATHERS.....	November, 1910, to October, 1912
A. G. MITCHELL.....	November, 1912, to October, 1914
*F. M. McNULTY.....	November, 1914, to October, 1916
J. G. CODE.....	November, 1916, to October, 1917
*D. M. HOWE.....	November, 1917, to October, 1918
*J. A. SPIELMANN.....	November, 1918, to October, 1919
H. H. MAXFIELD.....	November, 1919, to October, 1920
FRANK J. LANAHAN.....	November, 1920, to October, 1921
SAMUEL LYNN.....	November, 1921, to October, 1922
D. F. CRAWFORD.....	November, 1922, to October, 1923
GEO. D. OGDEN.....	November, 1923, to October, 1924
A. STUCKI.....	November, 1924, to October, 1925
F. G. MINNICK.....	November, 1925, to October, 1926
G. W. WILDIN.....	November, 1926, to October, 1927
E. J. DEVANS.....	November, 1927, to October, 1928
W. S. McABEE.....	November, 1928, to October, 1929

*—Deceased.

PROCEEDINGS OF MEETING

MARCH 27, 1930

The meeting was called to order at the Fort Pitt Hotel at 8:00 o'clock P. M., with Vice-President Louis E. Endsley in the chair, in the absence of President E. W. Smith.

An introductory program was rendered by Mr. Arthur Eynon, Tenor; Mr. Charles Hammer, Basso, with Mr. Marx at the piano. These three gentlemen are employees of the Pittsburgh & Lake Erie Railroad. They rendered several very pleasing songs during the evening.

The following gentlemen registered:

MEMBERS

Allen, Harvey	Fendner, W. J.
Altsman, W. H.	Fitzpatrick, T. R.
Ashton, William A.	Forsberg, R. P.
Beam, E. J.	Freshwater, F. H.
Berg, Karl	Gerber, H. L.
Berghane, A. L.	Glaser, J. P.
Brinkhoff, W. H.	Gordon, George A.
Buffington, W. P.	Greene, W. F.
Burgham, Maurice	Haller, Nelson M.
Campbell, J. T.	Hamilton, William
Carlson, L. E.	Hamilton, W. H.
Carmack, J. L.	Hanna, R. B.
Carson, John	Harper, G. S.
Chilcoat, H. E.	Henry, Frank P.
Conway, J. D.	Holmes, E. H.
Corcoran, James	Hughes, J. E.
Cotter, G. L.	Hussong, Albert, Jr.
Courtney, H.	Jones, William J.
Covert, G. W., Jr.	Kaup, Earle W.
Crawford, A. B.	Kelly, L. J.
Creighton, D. M.	Kempton, J. W.
Croke, Thomas F.	Ketchpel, Paul A.
Cruikshank, J. C.	Kummer, Joseph H.
Cunningham, R. I.	Lanahan, Frank J.
Dambach, C. O.	Laurent, Joseph A.
Daugherty, W. A.	Lawson, A. F.
Devans, E. J.	Leavers, E. J.
Diven, J. B.	Lee, L. A.
Edwards, C. H.	Lobez, P. L.
Emery, E.	Long, R. M.
Emsheimer, Louis	Lowndes, T. H.
Endsley, Prof. Louis E.	Lowry, William F., Jr.
Falkner, A. J.	Ludgate, B. A.

Lynn, Samuel	Sattley, E. C.
Meinert, Henry	Schmitt, Raymond F.
Millar, C. W.	Seiss, W. C.
Misklow, C. J.	Shafer, John S.
Mitchell, F. K.	Sheets, H. E.
Mitchell, W. S.	Shellenbarger, H. M.
Moore, Donald O.	Sheridan, T. F.
Moses, G. L.	Shull, George S.
McHugh, C. A.	Smith, R. W.
McIntyre, R. C.	Steen, W. E.
McKinley, A. J.	Stoffregen, Louis E.
McNamee, W.	Tipton, G. M.
McNulty, A. P.	Thomas, Theodore
McPherson, A. R.	Tomasic, T. M., Jr.
Nelson, W. M.	Toussaint, R.
Ness, H. S.	Trautman, Harry J.
Norris, J. L.	Tucker, J. W.
O'Leary, J. J.	Uline, C. S.
Paisley, F. R.	Vandivort, R. E.
Pringle, P. V.	Van Wormer, G. M.
Rauschart, E. A.	Walther, G. C.
Redding, P. E.	Weston, A. P.
Redding, R. D.	Wheatley, William
Renshaw, W. B.	Wikander, Oscar R.
Rizzo, C. M.	Winslow, Sidney H.
Sample, W. E.	Witherspoon, B. H.
	Wynne, F. E.

VISITORS

Arnold, C. C.	Kupferberg, Basil
Banks, William E.	Lewis, S. B.
Briscoe, J. W.	Longdon, C. V. (C. V.)
Brown, W. A.	Marquis, J. M.
Burnett, J. A.	Mayer, Herbert J.
Carruthers, G. R.	Mitchell, Paul S.
Carter, E. H.	Montag, J. W.
Collins, James S.	McKinley, John T.
McCracken, C. M.	O'Neill, F. C.
Davis, C. S.	Onsrud, Lawrence J.
Duffy, William H.	Oschman, William
Fleming, Lt. T.	Pry, William Henry
Gill, Dewey L.	Reeve, F. J.
Gollmer, H. C.	Rhonson, G. H.
Gregg, J. J.	Sauvage, W. H.
Hemma, Charles H.	Schroeder, Gunther
Heyser, R. O.	Smith, C. W.
Hoch, Charles K.	Smith, Sion B.
Hood, C. E.	Stein, J. A.
Hussong, Albert M.	Thomas, H. N.
Kating, H. G.	Titler, W. S.

The call of the roll was dispensed with, the record of attendance being obtained through the registration cards.

The reading of the minutes of the last meeting was dispensed with, as they have appeared in printed form and been distributed to the members.

The Secretary read the following list of applications for membership:

Burnett, John A., Pipe Fitter, P. & L. E. R. R., 139 Clairhaven Street, Crafton Heights, Pittsburgh, Pa. Recommended by G. M. Van Wormer.

Dixon, C. P., Assistant Train Master, Pennsylvania Railroad, 527 Sixth Street, Oakmont, Pa. Recommended by J. L. Pringle.

Fulton, H. B., Movement Director, Pennsylvania Railroad, 1023 Manor Drive, New Kensington, Pa. Recommended by J. L. Pringle.

Hood, C. E., Sales Department, Standard Steel Car Corporation, 1120 Frick Building, Pittsburgh, Pa. Recommended by J. D. Conway.

Horton, H. R., Superintendent of Instruction, Pittsburgh Railways Company, 435 Sixth Avenue, Pittsburgh, Pa. Recommended by H. H. Fenton.

Jones, H. W., General Superintendent Motive Power, Pennsylvania Railroad, 5817 Elmer Street, Pittsburgh, Pa. Recommended by R. H. Flinn.

Jones, Martin, Car Inspector, P. A. & McK. R. R., 3615 Oltman Street, Corliss Station, Pittsburgh, Pa. Recommended by G. M. Van Wormer.

Longdon, Clyde V., Engineer, T. & E. D. Dept., Westinghouse Air Brake Company, 561 Broadway Extension, East McKeesport, Pa. Recommended by L. E. Carlson.

McBeth, P. C., Sales Manager, The Niles Tool Works Company, Grant Building, Pittsburgh, Pa. Recommended by J. D. Conway.

Patterson, John W., District Sales Manager, Western Wheeled Scraper Company, 324 Fourth Avenue, Pittsburgh, Pa. Recommended by F. A. Rumbarger.

Rupp, Edwin S., Chief Clerk to Division Accountant, B. & O. R. R., 220 Virginia Avenue, Mt. Washington Station, Pittsburgh, Pa. Recommended by J. H. Lindsay.

Triem, W. R., Superintendent Freight Transportation, Pennsylvania Railroad, Pennsylvania Station, Pittsburgh, Pa. Recommended by R. H. Flinn.

Wolcott, Charles F., District Manager, American Railway Association, Koppers Building, Pittsburgh, Pa. Recommended by E. J. Devans.

CHAIRMAN: These applications will be referred to the Executive Committee, in accordance with our By-Laws, and upon approval by them the gentlemen named will become members without further action.

Is there any further business to be taken up at this time? If not, we come to the paper of the evening. It will be presented by Mr. R. P. Forsberg, of the Pittsburgh & Lake Erie Railroad, and his subject is "Some of the Foundation Stones Upon Which a Successful American Railroad is Built." Mr. Forsberg.

Some of the Foundation Stones Upon Which a Successful American Railroad Is Built

**By R. P. FORSBERG, Principal Assistant Engineer,
The Pittsburgh & Lake Erie Railroad Company, Pittsburgh, Pa.**

Mr. Chairman and gentlemen of the Railway Club of Pittsburgh, I desire to express my sincere appreciation for the invitation I received to address you this evening. It was my privilege to have been a member of this organization at its very inception, but after a term of years I grew weary in well doing and fell by the wayside, but happily for me I returned last month to the fold, a sincere and a repentant prodigal, highly resolved that I shall endeavor in the succeeding years by consistent attendance at our meetings and the rendition of any small service that may lie in my power, to effectually wipe out my inglorious past.

I am to speak to you this evening on the subject that has just been announced, "Some of the Foundation Stones Upon Which a Successful American Railroad is Built." I wish that I had sixty or seventy minutes to present my theme, instead of thirty-five or forty, for it is a subject of broad interpretation and wide importance, but I promise that I will keep strictly within my allotted time, for I know of no greater bore or impostor than the man who promises to speak for thirty minutes and then gets up and talks and rambles for twice that length of time. It is usually wholly unnecessary for a wealth of meaning may be packed away into a limited number of properly chosen sentences.

For example:—A stern austere old father in dispatching his youngest son to college for his last year, gave him to understand in terms unmistakable that absolutely no excuse would be accepted for failure to pass his final examinations with creditable marks. But the young man allowed the lure of the social activities and the lure of the athletic activities to take many of the hours that should have been devoted to the study period, with the result that two days after the finals his elder brother received a telegram from him reading:

“I have failed in four out of five subjects. Prepare Dad.” The next day he received a reply wire from his brother reading: “Your message received. Dad is prepared alright. Prepare yourself.”

The greatest Teacher that mankind has ever known spoke one day to a group of willing listeners, choosing as his subject practically the same theme that I present to you this evening. He said that a wise man built his house upon a rock. The rain descended, the floods came and the winds blew and beat upon that house, and it fell not for it was founded upon a rock. A foolish man built his house upon the sand. The rain descended, the floods came and the winds blew and beat upon that house and it fell:—and great was the fall of it.

And from that day until the present time I believe that the wiseman may be readily distinguished from the foolish man by noting the character of the foundation upon which he is building, be the structure he is rearing a mental, a moral or a physical one.

In my profession as a designing engineer I have had an ample opportunity to note the value of a firm, unyielding stable foundation. I know, just as you know, that it matters not what may be the beauty of the superstructure, be it a stately cathedral, a modern sky scraper, or the massive abutment of a long span bridge, if the foundations are faulty, are yielding, are insecure, the skill, the vision, the labor of the architect or the engineer in designing or building the superstructure, are of no avail for collapse and ruin must of necessity follow the failure of the foundation.

As your Club devotes its energy to the study of those things that pertain to the successful construction, operation and maintenance of a railroad I thought it might be of interest to you tonight if I speak briefly of some of the foundation stones upon which a successful American railroad is built. Their name

is legion for they are many, but I will briefly refer to only four and I present them to you not in logical sequence nor any attempt to place them in order of their relative value, but rather state them as they come to me.

PHYSICAL.
CHARACTER.
SERVICE.
COURTESY.

The records of the Interstate Commerce Commission show that for the year ended December 31, 1929, the steam railroads of the United States transported 198,476,114 passengers, and it would be of real interest to know how many, if any, of that vast number as they comfortably traveled over the rails with speed and safety reading a paper, periodical, engaging in friendly conversation, a game or viewing some passing scenery from the car windows, ever gave a passing thought relative to the one hundred and one things that the management of that road had devised and provided in order to insure the safety and the comfort of their journey.

I am well aware of the generous contribution that the up-to-date equipment of a modern American Railroad makes toward such service, but I believe that you will agree with me when I say that the basic, the fundamental element is to be found in the physical foundation that supports the road bed, which road bed in turn sustains the traffic. If the road bed is all that it should be it means that the locating engineer, the designing engineer, the engineer of construction and the engineer of maintenance of way has each in turn given his best to the problems that confronted him.

Your, "Subject Committee", requested me in the course of my talk to say something, however, brief, relative to some of the problems that beset the engineer of maintenance of way today, and as reference to that subject most aptly comes under the foundation stone we are designating as "PHYSICAL", I very briefly refer to it at this time.

In my estimation the greatest problem that confronts that engineer today is one that is as old as the eternal hills, namely providing adequate track drainage. The track supervisor finds himself all too often in the sad plight of the Ancient Mariner, as depicted by Samuel Taylor Coleridge, "Water, water, everywhere nor any drop to drink." Which expression, by the way, recalls to my memory an incident that transpired in my boyhood days.

It was my fortune, or my misfortune, depending entirely upon ones point of view, to have first seen the light of day beneath the blue skies of Dixie Land. My boyhood days and my young manhood days were spent amid the green fields and the fertile acres of Old Virginia. In a certain town in that section there was an old character who drank freely of everything under the sun except, water. He had taken the "Keely Cure" time after time, he had signed the temperance pledge seventy times and broken it seventy times seven. Some of the boys conceived the idea that if the old fellow, while in an intoxicated state, could be frightened into believing that he had died as a result of his dissipation, a cure might be effected. Such a plan was accordingly framed, in which the services and the equipment of the local undertaker were enlisted.

A few evenings later the old fellow was found on the sidewalk in a drunken stupor and the scheme was at once put into action. He was quickly bundled into a little spring wagon that was commandeered for the occasion, and carried to the basement of the undertaker's establishment. The basement, a room approximately twenty by forty feet, was lined on its four sides with caskets and rough boxes extending from the floor to the ceiling.

One of these caskets was placed on two chairs and the unconscious form of the old fellow was placed in it. Then another casket was placed by the side of it, and one of the boys got in and laid down at full length. Lighted candles were placed at the head and the foot of each casket, and the boys assisting in the procedure hid themselves among some of the rough boxes. The boy in the casket reached over and shook the old fellow several times and he finally awoke. He gazed intently for a few minutes at the lighted candles and the caskets that lined the walls, and then sat upright in his casket.

As he did so the boy at his side also sat up and looking directly in his face said, "You must not sit up, lie down, you are dead." "I am dead?" said the old fellow. "Yes you are dead", responded the boy. "Well, are you dead?" parried the old fellow. "Yes, I am also dead", responded the boy. "Well", said the old fellow, "How long have I been dead?" "Why, you have been dead for three weeks", responded the boy. "Well, how long have you been dead?" asked the old fellow. "I have been dead for six months", was the response. "Well, stranger", said the old fellow, "Seein' as how you are better acquainted

around these diggings than I am, can you tell me where I can get a good drink?"

Other things being equal, the track supervisor or the section foreman who keeps his drainage pipes open and his ditches clean and well drained at all times, is the one who has an easy riding section of track maintained at a minimum amount of expense.

An all important factor in the drainage system, is the maintenance of clean ballast. It matters not how elaborate and adequate the drainage system may be, if dirty ballast holds the water and prevents it from finding an easy outlet, the drainage system is in reality, "Love's labor lost". For many years, and for that matter on many roads today, the ballast is cleaned by "forking" it or cleaning it by hand with ballast forks.

Today machines are in use on many of our roads that very successfully clean the ballast between the ends of the cross ties of two tracks, in the space commonly referred to as the, "six foot strip". These machines, operated by a gasoline engine, excavate the ballast to a depth of eighteen inches below the top of the rail, screen it, separate the screenings from the ballast and deposit the cleaned ballast behind the machine and the screenings in trays, which trays in turn are emptied by hand at the side of the road bed. This method results in a greatly reduced cost of performing that service.

When the supply of wood was all plentiful and its cost low, the cross tie problem was not as acute as we found it to be in later years, when those conditions had changed. "Necessity is the Mother of invention," and the use of creosote oil treatment, that prolonged the life of a cross tie in service from eight or ten years to twenty years, and the use of tie plates and screw spikes that gave an increased bearing area of the rail load on the cross tie, and practically put an end to mechanical wear, opened the field for the use of many varieties of soft woods as cross ties. The renewal of a cross tie that supports rails resting on a properly designed tie plate, which is attached to the cross tie by screw spikes, will be made wholly on a basis of decay, for mechanical wear will have been removed.

The Railroad Engineers and the Rail Experts have for many years past been deeply concerned about rail failures caused by transverse fissures. The transverse fissure, very briefly described, is a fracture that starts inside of the head of the rail, and develops into a separation of the steel in a vertical plane

at right angles with its length. These fractures, sometimes quite small and hidden from the surface, are developed, or increased, by the heavy loads moving over them. It is generally conceded that these fissures are the result of some feature in rail manufacture not yet definitely determined.

Detection of transverse fissures before they reach the surface of the rail has been made possible within recent years by the development of a machine known as the Sperry Device, which device may be applied to new rails or those in service in the track. The Sperry Device, briefly described, is a machine that forces an electric current through the rails as it passes over them, and by noting the variation in the current when a transverse fissure is encountered, it may be definitely and accurately located. While the perfection of the Sperry Device is an advanced and important step, the prevention of transverse fissures by improved rail mill practice is, of course, of far higher importance.

I have referred in the briefest possible manner to five of the problems that confront the engineer of maintenance of way today. There are many, many others and an entire evening, in my opinion, could be very profitably given to their consideration and discussion.

You have often seen a large masonry pier supporting a long span bridge, constructed in the middle of a swiftly flowing stream, but how many of us have ever stopped to think of the method that was employed in placing the masonry there, firmly resting on a bed rock foundation successfully defying the onslaughts of high water, ice and the many other physical objects that hurl themselves against it.

One of the methods quite often used is the pneumatic caisson. A brief, one minute description of which may interest you. The pneumatic caisson is essentially a large, inverted box on which the pier masonry is built. It is usually constructed on the shore, launched and towed into the location where it is to be submerged. When it has been accurately located and securely anchored in the stream, the process of placing stone masonry or concrete on it is started. The weight of the masonry submerges it and when the caisson sinks into the yielding bottom of the river bed air is forced into it, which compressed air expels or drives out the water. The workmen go down into the caisson through a shaft constructed in the pier, passing through an air lock in so doing, in which air lock the pressure of the

air is changed from atmospheric pressure to the pressure required to keep out the water, which air pressure increases as the pier sinks deeper and deeper into the river bed.

The workmen in the caisson excavate the material under their feet and this excavated material is sent to the top through another shaft, which material must also pass through an air lock. When the caisson reaches bed rock the rock, if necessary, is leveled off and the caisson is then filled with concrete, and the completed pier rests upon a stable, sure, unyielding foundation. I know of no simpler illustration of the pneumatic caisson than to take an ordinary tumbler from which we drink, invert it, turn it upside down, and force it in that position down in a bucket of water until it reaches the bottom of the bucket. The air space in the tumbler will give a good illustration of the air space in which the workmen perform their labors in a pneumatic caisson 50, 75, or 100 feet below the surface of the water.

The deepest pneumatic caissons that have been sunk to date are those in the piers of the comparatively recently constructed Kennebec River Bridge near Bath, Maine, which structure carries the Maine Central Railroad and a state highway over the river. One of those caissons was sunk to a depth, below high tide, of 125 feet, which, as before stated, is the lowest depth to which a pneumatic caisson has ever been submerged.

There is a fascination about such work, for no two cases ever present just the same problems, and freedom from routine is always welcome. The real engineer and the real executive always welcome the opportunities that come to them to solve any especially intricate problem, and they make the most of the circumstances in which they find themselves. Which brings to my memory the following incident:

A man was badly bitten by a dog that apparently was afflicted with the rabies. He was rushed to a hospital and the physician who examined him advised that he should take the Pasteur treatment. The patient consented and an injection of serum was, at once, given. The physician suggested that he take a seat in the waiting room until an hour had elapsed, when a second injection would be administered. At the expiration of the first period the physician went into the waiting room and found his patient seated at a table writing away at a rapid rate.

"Oh, come my man", said the physician, "Don't take this

too seriously, we expect to save you, you're not going to die. I suppose that you are writing your last will and testament." "Oh, no, doctor", said the patient, "I'm not making my will, but in case I do go mad I am making out a list of the people that I want to bite."

Our second foundation stone is—CHARACTER. Someone has said, and in my opinion truly said, that "Character is what we are, reputation is what people believe us to be." No stream can rise higher than its source. No Railroad Company can earn for itself an enduring name for fair dealing, an honest policy, a forward constructive program higher than the character of the men who compose its official family.

When Iole was asked how he knew that Hercules was a god, responded, "Because I was content the moment my eyes fell on him." Have you ever met, have you ever been in the presence of, have you ever communicated with men who so impressed you? I daresay you have, for thank God countless thousands of such men inhabit our land today and many of them may be found in the official families of our railroads.

Stonewall Jackson once said of Robert E. Lee, "He is the one man whom I would willingly follow blindfolded." No higher tribute can be paid to the character of any man. I heard a bank official at a recent dinner say that the institution he represented would rather negotiate a loan with a man of upright character who offered collateral that might be questioned, than with a man who offered gilt edged collateral, but whose character might be questioned.

What is Character? "It is the highest development that nature offers us, for a man may be what he elects to be." I do not mean that he can amass wealth, or reputation, or fame or glory at will, but he can be a man if he so determines to be, for circumstances do not make a real man.

Gentlemen, money cannot purchase it, intellect will not provide it, your ancestry, proud though it may be cannot vouchsafe it, for, "Character can only be built by one's own determination and noble ambition to live in constant contact with righteousness and with truth."

I hope that I am speaking loud enough and enunciating distinctly enough to be heard and understood by all in the room, and that I will not be subjected to the embarrassment that I once heard of a speaker being placed in.

This speaker had a very thin voice that carried badly, a

very poor and indistinct enunciation and his material was worse than his voice and enunciation combined. He had been speaking for about ten minutes when someone in the rear of the room shouted, "Louder, louder." An old man who was sitting in the front row listening intently to the speaker promptly arose and turning to the rear of the room said, "Can't you hear what this man is saying?" "No sir" said a young man, "I cannot." "Well then" said the old man, "Sit down and thank God that you can't."

We quickly pass to our third foundation stone which we designate as, SERVICE.

"An old man traveling a lone highway,
Came at the evening, cold and gray,
To a chasm vast and deep and wide.
The old man crossed in the twilight dim,
The swollen stream had no fear for him:
But he turned when safe on the other side,
And built a bridge to span the tide.

"Old man," said a fellow pilgrim near,
"You're wasting your strength with building here:
Your journey will end with the ending day,
You never again will pass this way:
You've crossed the chasm deep and wide,
Why build you this bridge at evening tide?"

The builder lifted his old gray head,
"Good friend, in the path I have come," he said,
"There followeth after me today,
A youth whose feet must pass this way,
This chasm that has been as naught to me,
To that fair haired youth may a pitfall be,
He, too, must cross in the twilight dim,
Good friend, I am building this bridge for him."

To the very last he was performing an act of service, and gentlemen I say to you tonight that the Railroad Company that does not strive, above all other things, to give to its patrons 100% service, is an organization that is paying small, if any, dividends to its stockholders and is in grave danger of being closed out some day by the sheriff.

I know that the Railroad Company, with which I am connected, and all other railroads of whose affairs I have any per-

sonal knowledge, keep ever before their employees the fact that the one great commodity that they have for sale is Service.

Compare the movement of freight by the steam railroads today with that of a few years ago and you get a good picture of real or genuine service. We know that comparatively a few years ago when an article was shipped by freight the time of its arrival at its destination was problematic, an unknown quantity. Today the picture is changed and we transport commodities by freight with a speed and precision of time that is almost unbelievable.

The passengers on a steam railroad today, especially the through passengers, travel with speed and safety, having all the comforts and ease and luxury that the finest and most exclusively appointed hotels can offer.

The railroads can render one hundred per cent service only when every man in the organization, from the chief executive to the laborer on the section gang is imbued with that idea, is permeated with a real desire to service. How do you measure up when such a yard stick is applied? Don't be a drone. Don't be a handicap to some fellow worker when you could be an inspiration. Don't go about your work in a half dead manner.

It would be better for you to accept the advice that I once saw displayed by an alert undertaker. This man had a large sign on his establishment reading, WHAT'S THE USE OF GOING ABOUT HALF DEAD WHEN WE WILL BURY YOU FOR \$18.50.

When I was a boy every girl in my home town had an autograph album in which every boy had written verses comparable with, "Roses are red, etc." If those albums could be collected tonight I could say with absolute certainty that on the last page of each one you would find this inscription, "Last, but not least, William." William had a copyright on that expression, and by the way William, today, is a member of the official family of one of our large railroad systems.

And so, while I refer to "COURTESY" last this evening, it is not to be inferred as I have heretofore stated, that it holds that position in the relative value of the foundation stones upon which a successful American railroad is built.

In the rush and hurry of our modern life I fear sometimes that we are getting away from that plain, old fashioned courtesy that your mother taught you and my mother taught me when they made us scrape the mud off our shoes before we came in

the house and quickly doff our caps in the presence of ladies.

It is said that the other day in Pittsburgh a woman boarded a street car in which every seat was occupied by men. One man quickly arose, touched his hat and offered the woman his seat, and she fainted dead away. When she had been revived she turned to the man and said, "Thank you," and the man fainted dead away.

You will find in the Book of Rules of every successful American railroad instructions from the management that every employe must courteously discharge his duties. It will state furthermore that the good will and the friendship of the communities served by a railroad are its most valued assets, and the courteous treatment of the public by the employes of the railroad, tends more than any other factor to promote and to maintain those relations.

A woman about to board a trolley car at a Boston suburb asked the conductor, "Does this car go to Mattepan?" "No, madam," replied the conductor. "That's funny," said the woman. "Yes, madam, I know it is very funny, but I haven't time to laugh now," retorted the conductor as he pulled the bell cord and the car sped away. The next day the conductor was summoned before the Superintendent of the line and asked, "What was it that you said to that woman yesterday, when she said it was funny your car did not go to Mattepan?" The conductor grinned and said, "I said yes it was funny, but I was late and did not have time to laugh." "Take ten days off without pay and laugh, laugh, laugh it out of your system," said the Superintendent, "And when you come back come prepared to give courteous replies to any questions that may be asked you by our patrons."

A man stood one day in a cigar store watching a young clerk selling cigarettes. A customer entered and said, "Give me a package of Pall Mall cigarettes." And the clerk said, "Yes sir, Pall Mall cigarettes, twenty cents, I thank you." Another customer came in and said, "Give me a package of Pell Mell cigarettes." And the clerk said, "Yes sir, Pell Mell cigarettes, twenty cents, I thank you." Another customer entered and said, "Gime me a package of Parl Marl cigarettes." And the clerk said, "Yes sir, Parl Marl cigarettes, twenty cents, I thank you." The bystander walked over to the clerk and said, "See here young man, what is the name of those cigarettes you are selling so fast this morning?" Your first customer called

them, Pall Mall, the second Pell Mell, and the third Parl Marl, what is their correct name?" The correct name of those cigarettes is the name my customers choose to call them by," responded the clerk. "I am behind this counter to sell cigarettes and not to teach pronunciation." He was too courteous to correct the speech of his trade, but we note that to every customer that came in he sold a package of cigarettes. A contrast to the courtesy of that clerk is seen in the following incident.

Near a crowded street car transfer corner in the city of New York a woman rushed hurriedly into a hardware store and said to the one busy clerk, "I'm in a hurry, give me a mouse trap quick, I've got to catch a street car." The clerk stopped long enough to laugh and the woman blushed and caught the street car by running, but the clerk did not sell the mouse trap. "Why? COURTESY, or in that case a lack of courtesy.

Don't laugh at the mistakes of others. It is cheaper and safer to go to the movies and laugh at people who hire themselves out for the express purpose of making mistakes for you to laugh at.

Emerson once wrote, "Life is not so short but that there is always time enough for courtesy." Even in our busy American life this is true. A man may be business like without being gruff like. There is a difference between brevity of conversation and shortness in speech.

There is a decided and distinct difference between true courtesy and that mawkish humility of servitude. The man who fawns before his superiors is all too often ruthless and inconsiderate toward those who report to him.

Courtesy, which after all is only kindly consideration, often evokes or brings out courtesy in others. We often unconsciously, unintentionally answer in the same harsh uncouth terms in which we are addressed.

I know of no general definition of courtesy, no term that better describes it than to state it is good will without reason. "It is doing what nothing under the blue heavens prompts us to do but human kindness. It springs from the heart; if the mind prompts or suggests the action there is a reason, and if there is a reason it is not courtesy, for courtesy knows no reason. Courtesy is good will, and good will is prompted by a desire to be kind and considerate to all with whom we come in contact."

We have tried to examine with you, rather briefly, four of

the many foundation stones upon which a successful American Railroad is built. I do not expect you to remember all that I have said, but I trust that I have offered some suggestion that may cause you to stop, even for a little while, some day in the mad rush of our busy American life and examine the foundation upon which you have builded. Examine it carefully, examine it critically, that you may be sure, beyond the peradventure of a doubt, that the untoward influences that sweep over the life of every man have not undermined nor weakened it, and that some day when the rain descends and the floods come and the winds blow that you will stand steadfast and unmovable, because you are founded upon a rock.

I deeply appreciate the incomparable attention you have given to me for the past forty minutes. It has proved a real inspiration and help and I sincerely thank you for your splendid co-operation.

CHAIRMAN: I am sure we are all glad to have been here tonight and to have heard this talk. I am hoping the younger men here in this crowd will think of that just a little seriously. There are men here who have worked with Mr. Forsberg and have enjoyed working for him, who can attest the truth of what he has said. And I want to tell you gentlemen here tonight that one of the men that I look back upon many, many times is W. F. M. Goss, Dean of the School of Engineering at Purdue University and a very active man in the Railway Association years ago. Some of you knew him. I went to work for him after college. It was a feast to look at him. He was so gentle, so genial, so courteous that I look back upon him as my engineering father and called him that many times, and he liked it. He died two years ago. He was an inspiration to every young man that ever came in contact with him.

We have heard tonight of the good that may come from courteous treatment. How much better we feel for it. Last week I was in a plant that I had not been in for ten years, and an old colored fellow who used to keep my laboratory clean came along and I saw him and said, "Hello, Joe, how are you?" That evening my brother-in-law, who worked in that plant, came home and told me Joe had said "Wasn't that fine for Mr. Endsley to speak to me." He went home and told his wife and it made her feel good, and I felt a lot better to do it.

I think many of us should have a few words to say on this

subject. Railroads are made up of some of the brightest material to be found. Will some one add something by way of comment or discussion? Mr. Hughes?

MR. J. E. HUGHES: Mr. President and Gentlemen: It certainly has been an inspiration for me to sit here and listen to my dear associate, Mr. Forsberg, make his address. I know that we will leave here tonight feeling much better for the many good things he has told us. I hope you will excuse me from an extended discussion.

CHAIRMAN: Mr. Lanahan, may we hear from you?

MR. FRANK J. LANAHAN: Mr. President, I was thinking that this subject has been so inspirational that it probably would unloosen the vocal chords of some of our heretofore tongue-tied members and the oratory that emanates from this source would eliminate the old fellows like myself, from the evening's program. It should be so tonight. It was a splendid talk, delightfully delivered and exceptionally well received. Not alone did it encompass railroading and engineering, but it had a pleasing human touch. To many of us, I am sure, the speaker occasions memories of long ago and we have been furnished with food for many a future conversation.

Mr. President, you have all heard from me so many, many times, that tonight it would be quite appropriate to hear from our younger members. There is such a wide field in connection with Mr. Forsberg's address, that the opportunity of discussion is practically unlimited. I hope a number will let us hear from them.

CHAIRMAN: May we hear from some one else? Mr. Donald Moore, of the Chamber of Commerce.

MR. DONALD O. MOORE: I have enjoyed the talk very much, and I think it is well worth while for us to reflect on some of the things the speaker brought out. I know it is just as easy to be courteous as it is to be gruff. Nobody gets anywhere by going around with a chip on his shoulder. But I did not come prepared to make a speech and I hope you will excuse me.

CHAIRMAN: Mr. Lynn, haven't you something to add?

MR. SAMUEL LYNN: I have heard my good friend Mr. Forsberg on many different occasions. I am very sorry I could not get here in time to have dinner with him this evening. But I did write him and say that I was going to make a special effort to get here in time to hear his talk tonight. I am very glad that I was able to get here because I knew we would get something that would be of benefit to all of us. I am sorry you placed a limit on Mr. Forsberg's time, for I assure you, from personal knowledge, that he has just gotten rightly started, and that he has a lot of good stories which would be well worth hearing had he been allotted a sufficient length of time to include some of them in his talk tonight.

There may be others here who wish to say something. However, I am sure we have all enjoyed Mr. Forsberg's talk, and while I am on my feet I make a motion that we extend a rising vote of thanks to Mr. Forsberg in appreciation of his address.

The motion was duly seconded and prevailed by unanimous rising vote.

CHAIRMAN: We are very grateful indeed to you gentlemen for coming here and giving us this treat, and I suggest that we all rise as an expression of our thanks to these gentlemen of the Pittsburgh & Lake Erie for their delightful entertainment.

The expression of appreciation was given by rising vote.

CHAIRMAN: If there is no further business, a motion to adjourn will be in order and we will proceed to the tables for the customary lunch.

ON MOTION—Adjourned.

J. D. CONWAY, Secretary.

R E S E R V E D

CAR LIGHTING

COMPLETE EQUIPMENT
ELECTRIC OR GAS



The Safety Car Heating and Lighting Co.

New York Chicago St. Louis Boston Philadelphia San Francisco Montreal

RAILWAY STEEL-SPRING CO.

Springs, Steel-Tired Wheels,
Locomotive and Car Wheel Tires.
Pressed Steel Journal Box Lids.

GENERAL OFFICE, 30 CHURCH STREET, NEW YORK

BRANCH OFFICES—Chicago, St. Louis, St. Paul, Richmond, Denver,
San Francisco, Dallas, Montreal, Que., Pittsburgh, Detroit, Cleveland

USED (Service-tested) A. R. A. FREIGHT CAR PARTS

Answering the four questions of chief importance:

QUALITY—Safe as Unused Parts if not actually Safer

QUANTITY—Substantial Volumes

CONDITION—No more trouble using than Unused Parts

SAVING—Very Satisfying

Are you receiving our Stock Lists? Write for them and our
interesting proposition.

BRIGGS & TURIVAS, Inc.

Cars (Retired and Second-Hand) and CAR PARTS
of All Kinds

Pittsburgh District Address: Imperial, Pa.

Phone: Imperial 132

General Office: Blue Island (Chicago) Illinois.

Plants: Blue Island, Ill.

Chicago Heights, Ill.

Pittsburgh, Pa.

For The Modern Car

Modern methods of railroading demand that equipment be kept on the move. Time out for wheel changes is a matter of greater moment than ever before. Two-thirds of a million Davis "One-Wear" Steel Wheels have proved their ability to keep out of the shop and eliminate all need of contour conditioning or re-turning. A special composition, heat-treated steel gives Davis "One-Wear" Steel Wheels maximum strength with lightness and makes them necessary to the modern car.

AMERICAN STEEL FOUNDRIES

New York

CHICAGO

St. Louis

YOUNGSTOWN

ALL STEEL CORRUGATED FREIGHT CAR DOORS

CAMEL

FREIGHT CAR DOOR FIXTURES

Weather and Burglar Proof

Top or Bottom Support

CAMEL SALES COMPANY

332 South Michigan Avenue

CHICAGO, ILLINOIS

Pressed Steel Car Co.

MANUFACTURERS OF

FREIGHT and PASSENGER

-:- CARS -:-

CASTINGS

FORGINGS

BOLSTERS

BRAKEBEAMS

TRUCKS

UNDERFRAMES

GREY IRON WHEELS

COMPLETE FACILITIES FOR REPAIRING CARS

OFFICES

New York

Pittsburgh

Chicago

St. Paul

Standard Steel Car Co.

OFFICES

General Offices: Frick Bldg., PITTSBURGH, PA.
NEW YORK, 170 Broadway
CHICAGO: Fisher Building

WORKS

Butler, Pa.
New Castle, Pa.
Hammond, Ind.

STEEL AND COMPOSITE

FREIGHT CARS

For all Classes of Service, from our Standard Designs,
or according to Specifications of Purchasers.

Steel Car Underframes

TRUCKS, BOLSTERS, BRAKE BEAMS, ETC.

Capacity 50,000 Cars per Annum **INQUIRIES
SOLICITED**

Union Steel Casting Company

Pittsburgh, Pa.

Cast Steel Locomotive Frames, Driving Wheel
Centers, Locomotive Steel Cylinders and
Miscellaneous Steel Castings

Vanadium, Nickel and other Alloy Steel Castings a
Specialty

CAR HEATING SPECIALTIES

Use "VAPOR"

Metallic Two-inch Steam Con-
nections between all Cars.

Automatic Temperature Control
Vapor System on all Cars.

VAPOR CAR HEATING CO., Inc.

Railway Exchange - Chicago, Ill.

GENERAL REFRACTORIES COMPANY

Home Office
PHILADELPHIA, PA.

Manufacturers of High Grade Fire Brick
For All Railroad Purposes

Locomotive Arch Brick
Direct from Manufacturer to Consumer

Consignment Stocks, Prompt Deliveries
Quality and Service Assured

RAILWAY SALES DEPARTMENT

Graybar Building—420 Lexington Avenue
New York City



H. & K.
Double Rotating Chair
No. 900

CHAIR CAR COMFORT IN DAY COACHES

These Luxurious Chairs

—bring to a focus the steady improvement made in Hale & Kilburn car seats during the last half century. The tendency in this development has been constantly towards greater comfort, larger and more commodious seats, softer springs and greater beauty.

Hale & Kilburn Co.

General Offices and Works:
1800 Lehigh Ave., Philadelphia

NATHAN

MECHANICAL LUBRICATORS

WATER COLUMNS INJECTORS LUBRICATORS

LOW WATER ALARMS

Locomotive and Stationary Boiler Fittings

NATHAN MANUFACTURING CO., 250 Park Avenue, New York

*Pacific Electric Railway
Main Street Terminal
Los Angeles*



Performance!



CONSIDER the locomotive in the broad light of a means of producing transportation.

Viewed in this light, the value of a locomotive to the railroad is measured by its ability to produce maximum gross-ton-miles-per-hour economically.

Stoker fired locomotives haul more tons and at higher speeds because they increase the sustained steam capacity of the locomotive.

The added locomotive earning power resulting from stoker firing justifies stoker application to any locomotives, large or small.

THE STANDARD STOKER COMPANY, Inc.

New York

Erie

Pittsburgh

VULCAN

CRUCIBLE STEEL COMPANY

Established in 1900

ALIQUIPPA, PA.

*Makers of the better grades of Tool Steel, and the
pioneers in the manufacture of high quality
Vanadium Steels.*

KING

METALLIC

for Locomotive Piston
Rods, Valve Stems and
Air Pumps.



PACKINGS

King Sander
Security Latch
King Indestructible Oil Cups
King Hand Boring Lathe
Gollmar Bell Ringer
Leach Sanders

Reg. U. S. Pat. Off.

THE U. S. METALLIC PACKING CO.
PHILADELPHIA, PA.

Pounds Pressure

THE safety cock of a Hudson Type 5200 is set to blow at 225. Her boiler test is 25% higher.

Would you put 3000 pounds pressure in that boiler? If you did you couldn't use that locomotive again.

A Grip Unit Nut, of a certain size, withstands vibration, intermittent torque—every service strain to which it's subjected—with 500 inch pounds lock.

Would you put 300 inch pounds of lock into that nut? You *could*, easily; but it would be hard to apply, wouldn't lock a bit better—and it would wreck the bolt, and the nut too, so that they couldn't be used again.

Twenty-three years of research, invention, experience, have developed, in Grip Nuts—not just a lock, but *just enough* lock. They apply; they lock; they hold; they don't junk the bolts, and the bolts don't junk them.

GRIP NUT COMPANY

5917 South Western Avenue

Chicago, Illinois

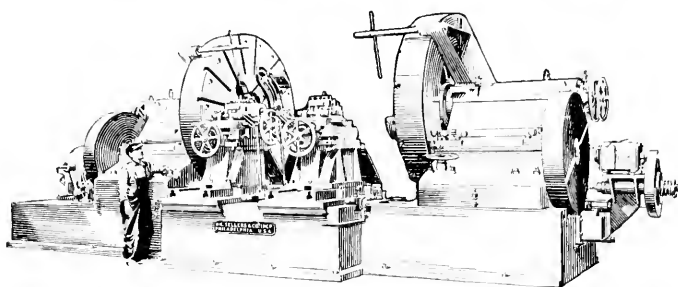
TUCO PRODUCTS CORPORATION

Tucolith Composition Flooring
Flexolith Composition Flooring
Royal Adjustable Car Window Screens
National Standard Steel Trap Doors
Universal Steel Trap Doors
Trap Door Locks and Holders
Tuc National Standard & Traction Roofing
Tuc Specially Treated Cab Curtain
Material
Tucocendur Plates

Tuco Long Wear Floor Dressing
Resisto Hairfelt Insulation
Tuc Rockwul-Jacket Insulation
Tucork Insulation for Car Floors
Tuc Floor Plate Preservative
Eclipse Deck Sash Ratchets
Steel Car Sheathing, Panels and Slats
Reliance Sash Balances
Perfection Sash Balances
Brown Window Sash Weatherstrips

30 Church Street,
New York

Railway Exchange Building,
Chicago



Railroad Shop Tools

Driving Wheel Lathes

Car Wheel Lathes

Axle Lathes

Driving Box Boring and Facing Mills

Car Wheel Boring Mills

Boring and Turning Mills

Tool Grinders

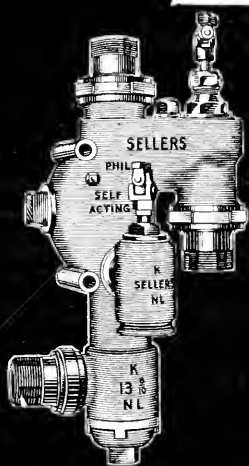
Drill Grinders

WM. SELLERS & CO., Incorporated

PHILADELPHIA, U. S. A.

SELLERS

*Class K, N-L Injector
for Hot Water*



The most satisfactory form of non-lifting injector. Widest range of capacities; restarts automatically and is self-adjusting. Can use hotter water than any other type of non-lifting injector and materially lessens the formation of scale in the boiler.

Circular on application

WM. SELLERS & CO.
Incorporated
Injector Dept.

PHILADELPHIA, U. S. A.

BOILER COMPOUNDS

SOOT REMOVER



Buckeye Chemical Co.

Factory and Laboratory:

DETROIT, MICH.

Pittsburgh, Pa.

5621 Wellesley Ave.

Montrose 1362

Rochester, N. Y.

82 St. Paul St.

Main 3084

Over Thirty Years Serving the Engineer

Donated by A Friend

for welding and cutting



in the railroad shops of Pittsburgh district and thruout the country —
Airco Oxygen—Airco Acetylene—Airco-
Davis-Bournonville Welding and Cut-
ting Apparatus—Supplies.

AIR REDUCTION SALES CO.

Pittsburgh—1116 Ridge Avenue

New York—342 Madison Avenue

**OKONITE (RUBBER) and VARNISHED CAMBRIC
INSULATED WIRES and CABLES**

Manson Tape

THE OKONITE COMPANY

Okonite Tape

Founded 1878

THE OKONITE-CALLENDER CABLE COMPANY, Inc.

Factories: Passaic, N. J. - Paterson, N. J.

Sales Offices:

New York - Chicago - Pittsburgh - St. Louis - Atlanta
Birmingham - San Francisco - Los Angeles - Seattle - Dallas



SUPERHEATERS

DESIGNING ENGINEERS AND MANUFACTURERS
OF ELESKO STEAM SUPERHEATERS FOR
LOCOMOTIVE, MARINE AND STATIONARY
BOILERS



FEED WATER HEATERS, EXHAUST
STEAM INJECTORS AND PYROMETERS
FOR LOCOMOTIVES

17 East 42nd Street
NEW YORK

THE SUPERHEATER COMPANY

Peoples Gas Building
CHICAGO

OFFICIAL PROCEEDINGS

RAILWAY CLUB OF PITTSBURGH

\$1.00 Per Year



25¢ Per Copy

Vol. XXIX

APRIL 24, 1930

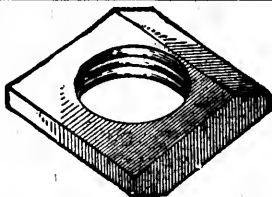
No. 6

BASIS OF INDUSTRIAL FITNESS

By ERNEST W. CORN, Field Representative,
National Safety Council, Chicago, Ill.

Steel Car Forge Company PITTSBURGH, PENNSYLVANIA

FORGINGS



Dieter Lock and Holding Nuts

STANDARD SAFETY NUT
CORPORATION

30 CHURCH ST.

NEW YORK

LOX-ON DEVICES CORPORATION

PAUL W. DIETER, President

30 CHURCH STREET

NEW YORK CITY

LEWIS IRON, "The Iron Superior"

Penn Iron & Steel Company, Creighton, Pa.

SOLE SALES AGENTS,

Joseph T. Ryerson & Son, Inc., Chicago, Ill.

OFFICIAL PROCEEDINGS
OF
The Railway Club of Pittsburgh

Organized October 18, 1901

Published monthly, except June, July and August, by The Railway Club of Pittsburgh, J. D. Conway, Secretary, 515 Grandview Ave., Pittsburgh, Pa.

Entered as Second Class Matter February 6, 1915, at the Postoffice at Pittsburgh, under the Act of March 3, 1879.

No. 6.
Vol. XXIX

Pittsburgh, Pa., April 24, 1930

\$1.00 Per Year
25c Per Copy



**The Standard
For Accuracy**

Starrett



**Cut Quicker
Last Longer**



**Accurate
Reliable**

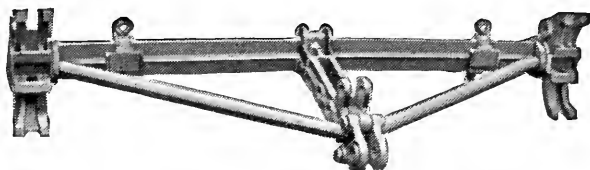
THE L. S. STARRETT CO., ATHOL, MASS., U. S. A.

BRAKE BEAMS

"Solid Truss"
and
Built-Up Types

AND

Brake Beam Supports



DAVIS "SOLID TRUSS" PASSENGER BEAM

ALSO

Pressed Steel Journal Box Lids

DAVIS BRAKE BEAM CO.

JOHNSTOWN, PA.

Sales Office: 418 Sixth Avenue, Pittsburgh, Pa.

GOULD

Side Frames Bolsters Couplers
 Passenger and Freight Journal Boxes
 Open Hearth Steel Castings

THE GOULD COUPLER CO.

NEW YORK

WORKS: DEPEW
 CLEVELAND

CHICAGO



CANDIES

Everybody likes Candy—with almost a thousand candies from which to make your selection, we can truthfully say that we have a variety to suit every taste—a box suitable for every occasion.

Lacquers
 Varnish
 Enamels
 Oil Colors



REG U S PAT OFF.

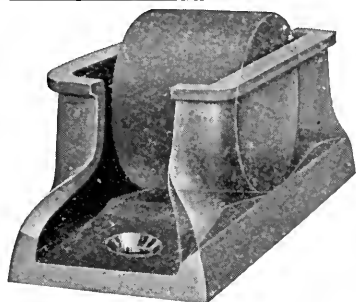
Railway and
 Industrial
 Protective
 Coatings

JAMES B. SIPE AND COMPANY
 PITTSBURGH, U. S. A.

The Q & C Company, 90 West St., N. Y. C.

Peoples Gas Building - - Chicago
 Railway Exchange Building - St. Louis

**Manufacturers of Track, Car and Engine
 Specialties**



STUCKI Side Bearings

A. STUCKI COMPANY
OLIVER BUILDING
PITTSBURGH, PA.

Canadian Representative
THE HOLDEN CO., LTD.
Montreal, Canada.

SOUTHERN WHEEL COMPANY

A. R. A. 850 LB.

SINGLE PLATE CHILLED TREAD WHEELS

FOR

70 TON CARS



*Our tests determine the best
shoe for each type of service.*

The American Brake Shoe and Foundry Company

230 Park Ave., New York

332 So. Mich. Ave., Chicago

**The Pocket List of
Railroad Officials**

*Used by the Officers of all Railroads on
The North American Continent*

Issued Quarterly

Subscription Price, \$6.00 per annum

Single Copies, \$2.50

Advertising rates on application

THE OFFICIAL RAILWAY EQUIPMENT REGISTER
ISSUED MONTHLY

Descriptive of freight and passenger cars of the Railways and
Private Car Companies in the United States, Canada and Mexico.

Subscription Price, \$15.00 per annum.

Single Copies, \$2.00.

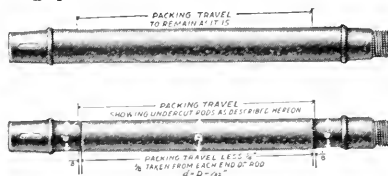
THE RAILWAY EQUIPMENT AND PUBLICATION CO.

J. ALEXANDER BROWN, Vice-President and Manager

424 West 33rd Street

New York

IF WE stated we could sell you the same steel you are now using for your piston rods at half the price you are paying, you would be greatly interested. Well, we can practically do that and make an additional saving of half the cost of labor required in preparing the rod for the engine by undercutting, as illustrated in cut below, instead of grinding or turning the wearing surface. That practice will extend the life of the rod fifty per cent or more. Paxton-Mitchell Metallic Packing will pack its own wear steam-tight until a rod has been reduced one-quarter of an inch. You will also save the cost of one set of packing, one sliding plate and one cone each time engine is in for general repairs.



Half sets of our packing segments may be reclaimed from scrap for use in making at least fifty per cent of renewals due to the four segment combination of our packing, which practically reduces the cost of making the renewals one-half.

"The Packing That Packs"

The Paxton-Mitchell Company
OMAHA, NEBRASKA

NATIONAL FRICTION DRAFT GEAR

The Perfect Shock Absorber

Requires No Re-Adjustment

NATIONAL MALLEABLE AND STEEL CASTINGS CO.

General Office — Cleveland, O.

"Outside" softening for removal of scaling salts, does not completely solve the water treatment problem.

Dearborn Scientific Treatment provides the supplementary correction needed to complete the treatment and free the water of corrosive and foaming tendencies.

DEARBORN CHEMICAL COMPANY

310 S. Michigan Avenue, Chicago 205 East 42nd Street, New York
Farmers Bank Bldg., Pittsburgh



SYMINGTON

Malleable Iron and Steel Journal Boxes
for Passenger and Freight Equipment

FARLOW DRAFT ATTACHMENTS

THE SYMINGTON COMPANY

New York Chicago Boston Baltimore Rochester Cleveland

BALL'S
Varnish Remover

OXOLIN
REGISTERED
THE IDEAL PAINT OIL

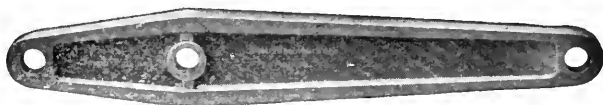
B. C.
Spirits

Ball Chemical Company

CHICAGO Office,
63 W. Van Buren Street.

Fulton Bldg., PITTSBURGH, PA.

Schaefer Drop-Forged Brake Levers



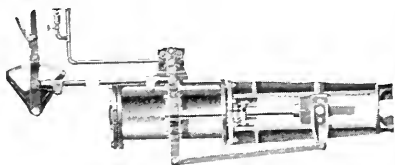
Designed to give uniform stress conditions throughout entire body of lever. Levers are drilled from templates and exact spacing between holes is thus assured.

Drop forging makes all levers uniform.

Lighter in weight with increased strength.

Schaefer Equipment Co.

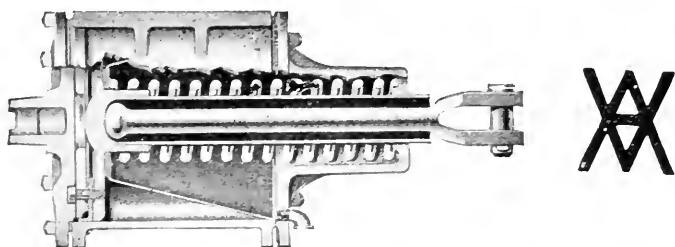
General Offices: Koppers Bldg., Pittsburgh, Pa.



ALCO REVERSE GEAR

THE Alco Reverse Gear was designed to meet the demands of diversified service. While it serves acceptably in heavy freight service, it responds equally well to the needs of high speed passenger requirements. Again, in fast freight, helper and switching service it gives quick and accurate valve gear adjustments. In other words, it meets the conditions imposed in all classes of service—it does not excel in one at the expense of another.

AMERICAN LOCOMOTIVE COMPANY
30 CHURCH STREET NEW YORK CITY



This New Protector Keeps Cylinders Clean

A collapsible water-proof hood that prevents moisture and dirt from reaching the cylinder walls. Lengthens life of packing cups, reduces leakage, decreases maintenance cost. . . Ask for Circular Notice 1082.

Westinghouse Air Brake Co., Wilmerding, Pa.

From Lamps to Locomotives



The Westinghouse Electric and Mfg. Co. is prepared to take care of your *every* electrical need.

When thinking electrically,
think—

Westinghouse

Grant Building

Pittsburgh, Pa.

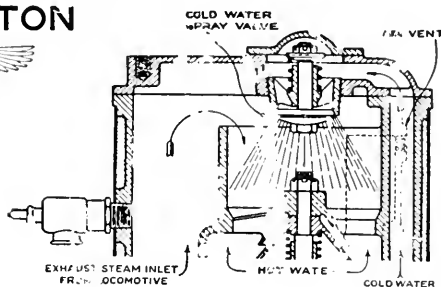
Modern Switching Locomotives

Every railroad should pay the same careful attention to the design of its switching power as it gives to its road engines. Baldwin Switching Locomotives are today successfully meeting difficult requirements in many busy yards and terminals.

THE BALDWIN LOCOMOTIVE WORKS

PHILADELPHIA

WORTHINGTON



The Secret of Worthington Feedwater Heater Efficiency —direct contact of water and exhaust steam

Scale and bad water have no effect on the temperature of feedwater delivered by the OPEN TYPE HEATER.

WORTHINGTON PUMP and MACHINERY CORPORATION

Works: Harrison, N. J. Cincinnati, Ohio. Buffalo, N. Y. Holyoke, Mass.

Executive Offices: 2 Park Avenue, New York, N. Y.

GENERAL OFFICES: HARRISON, N. J.

District Offices in 24 U. S. Cities.

Branch Offices or Representatives in Principal Cities of all Foreign Countries

H-9 F

Factors that Increase Locomotive Effectiveness



The Locomotive BOOSTER

Franklin Railway Supply Co., Inc.

17 East Forty-Second Street, New York

Chicago, Ill.

St. Louis, Mo.

San Francisco, Cal.

332 S. Michigan Ave.

Boatmen's Bank Bldg.

774 Monadnock Bldg.

Franklin Railway Supply Company, Limited, Montreal

Export Department—International Railway Supply Co.

30 Church Street, New York

STAYBOLTS FOR ANY BOILER REQUIREMENT

F. B. C. Welded, TATE Threaded,
and Flannery Two-Piece
Flexible Staybolt Assemblages

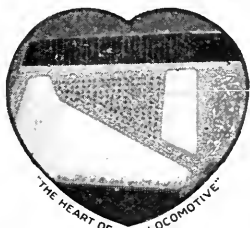
NU-TATE and TELL-TALE Bolts

Crown Stays and Rigid Bolts
(STRAIGHT OR REDUCED BODIES)
Bulletins Describing all Flannery
products mailed upon request.

FLANNERY BOLT CO.

FLANNERY BLDG.

PITTSBURGH, PA.



Nicholson Thermic SYPHONS

Thermic Syphons provide safety from the
"most dreaded accident," the boiler explosion
caused by low water which takes toll of many
lives and millions of dollars annually.

LOCOMOTIVE FIREBOX CO.,

Chicago

New York

Montreal

Hunt-Spiller Air Furnace Gun Iron

HAS THE
Strength and Wearing Qualities
THAT ARE ABSOLUTELY NECESSARY IN
LOCOMOTIVE CASTINGS

PRICES MODERATE

RESULTS GREAT

Manufactured Only By

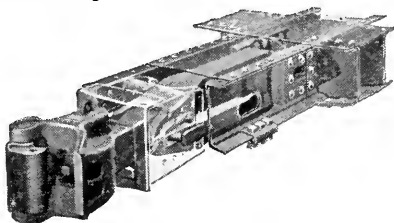
Hunt-Spiller Manfg. Corporation

J. G. PLATT, President and General Manager
OFFICE AND WORKS:
383 DORCHESTER AVENUE
SO. BOSTON, MASS.

V. W. ELLET.
Vice President

The Buckeye Steel Castings Co.

COLUMBUS
NEW YORK
CHICAGO



ST. PAUL
LOUISVILLE
LONDON

"BUCKEYE" Yoke and Draft Attachments

FORT PITT SPRING COMPANY

PITTSBURGH, PA.

SPRINGS BOTH COIL
& ELLIPTIC

For Railroad Service

ALLOY SPRINGS A SPECIALTY

Malleable CASTINGS OF UNIFORM QUALITY ARE PERMANENT

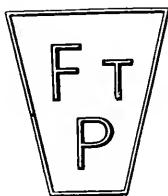
CURRENT AVERAGE TESTS

For 12 Months

910 Consecutive Heats

Tensile Strength, Yield Point Elong. %
Lbs. per sq. in. Lbs. per sq. in. in 2 in.

HIGH	61370	40420	28.1
LOW	56490	37210	22.6
AVERAGE	58344	38494	25.9



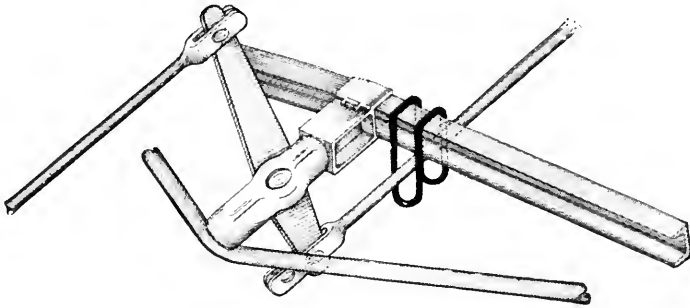
*This Trade-mark is your security on
Railroad Car Castings*

Send Blue Prints for Estimates

Fort Pitt Malleable Iron Company
PITTSBURGH, PA.

INDEX—ADVERTISERS.

NAME	Page	NAME	Page
Air Reduction Sales Co.....	xxiv	Penn Iron & Steel Co.....	Front Cover
American Brake Shoe & Foundry Co.....	iii	The Pocket List of Railroad Officials	iii
American Locomotive Co.....	vi	Pressed Steel Car Co.....	xviii
American Steel Foundries.....	xviii	The Q & C Co.....	ii
Baldwin Locomotive Works....	viii	Railway Equip't. and Publication Company	iii
Ball Chemical Co.....	v	Railway Steel Spring Co.....	xvii
Briggs & Turivas.....	xvii	Reymer & Bros., Inc.....	ii
Buckeye Chemical Co.....	xxiv	Safety Car Heat. & Lighting Co..	xvii
The Buckeye Steel Casting Co.	xi	Schaefer Equipment Co.....	v
Camel Sales Co.....	xviii	Wm. Sellers & Co., Inc.....	xxiii
Chicago Railway Equip. Co.....	xiii	Sipe, James B., & Co.....	ii
Davis Brake Beam Co.....	i	Southern Wheel Co.....	iii
Dearborn Chemical Co.....	iv	Standard Safety Nut Corp. Front	Cover
Flannery Bolt Co.....	x	Standard Steel Car Co.....	xix
Fort Pitt Malleable Iron Co....	xi	The Standard Stoker Co.....	xxi
Fort Pitt Spring Co.....	xi	The L. S. Starrett Co.....	Inside Front Cover
Franklin Rwy. Supply Co., Inc.	ix	Steel Car Forge Co.....	Front Cover
General Refractories Co.....	xx	Stucki Co., A.....	iii
The Gould Coupler Co.....	ii	The Superheater Co.....	Front Cover
Grip Nut Co.....	xxii	The Symington Co.....	v
Hale & Kilburn Co.....	xx	Tuco Products Corp.....	xxii
Hunt-Spiller Mfg. Corporation	x	Union Spring & Mfg. Co.....	xiv
The Kerite Insulated Wire & Cable Co., Inc.....	xxi	Union Steel Casting Co.....	xix
Locomotive Firebox Co.....	x	U. S. Metallic Packing Co.....	xxii
Lox-On Devices Corp.....	Front Cover	Vapor Car Heating Co., Inc....	xix
Nathan Mfg. Co.....	xx	Vulcan Crucible Steel Co.....	xxii
National Malleable and Steel Castings Co.	iv	Westinghouse Air Brake Co.....	vii
The Okonite-Callender Cable Company	Front Cover	Westinghouse Elec. & Mfg. Co.	vii
Paxton-Mitchell Co.....	iv	Worthington Pump and Machinery Corporation	ix



LOW COST PROTECTION

Afforded By the

CRECO BOTTOM ROD GUARD

Simply drive it on the brake beam.
It locks in place and cannot rattle.
Positively prevents fallen bottom rods.
Low in price and application cost.

Chicago Railway Equipment Co.

CHICAGO

Union Spring & Manufacturing Co.

RAILROAD SPRINGS

Kensington All Steel Journal Boxes

STEEL CASTINGS



Lightest and Strongest M. C. B.
Journal Boxes Made

WORKS:
NEW KENSINGTON, PA.

PITTSBURGH OFFICE
2001 CLARK BUILDING

NEW YORK	-	-	-	50 Church Street
CHICAGO	-	-	-	Fisher Building
RICHMOND, VA.	-	-	-	Mutual Building
LOUISVILLE, KY.	-	-	-	Equitable Life & Cas. Bldg.
BALTIMORE, MD.	-	-	-	Munsey Building
PHILADELPHIA, PA.	-	-	-	226 South 15th Street

OFFICIAL PROCEEDINGS OF The Railway Club of Pittsburgh

Organized October 18, 1901

Vol. XXIX
No. 6.

Pittsburgh, Pa., April 24, 1930

\$1.00 Per Year
25c Per Copy

OFFICERS FOR 1929-1930

President

E. W. SMITH,

Vice President, The Pennsylvania Railroad,
Pittsburgh, Pa.

Secretary

J. D. CONWAY,

1841 Oliver Building, Pittsburgh, Pa.

First Vice President

PROF. LOUIS E. ENDSLEY,
Consulting Engineer,
Pittsburgh, Pa.

Second Vice President

J. E. HUGHES,
Superintendent, P. & L. E. R. R.,
Pittsburgh, Pa.

Treasurer

E. J. SEARLES,
Manager, Schaefer Equipment Company,
Pittsburgh, Pa.

Executive Committee

FRANK J. LANAHAN, Pres., Fort Pitt Malleable Iron Co., P. O. Box 1054, Pgh., Pa.
A. STUCKI, Engineer, A. Stucki Company, 419 Oliver Bldg., Pittsburgh, Pa.
SAMUEL LYNN, Supt., Rolling Stock, P. & L. E. R. R., McKees Rocks, Pa.
D. F. CRAWFORD, Consulting Engineer, 5243 Ellsworth Avenue, Pittsburgh, Pa.
F. G. MINNICK, General Manager, P. & L. E. R. R., Pittsburgh, Pa.
G. W. WILDIN, Asst. Vice President, Westinghouse Air Brake Co., Wilmerding, Pa.
E. J. DEVANS, General Superintendent, B. R. & P. Ry. Co., Du Bois, Pa.
W. S. McABEE, Vice President, Union Railroad Co., East Pittsburgh, Pa.

Membership Committee

E. A. RAUSCHART, Mechanical Superintendent, Montour Railroad, Coraopolis, Pa.
OTIS R. HALE, Dis. Sales Mgr., American Loco. Co., Farmers Bank Bldg., Pgh., Pa.
T. E. CANNON, Gen. Supt., Locom. & Equipment, P. & W. Va. Ry., Pittsburgh, Pa.
GUY M. GRAY, Superintendent Motive Power, B. & L. E. R. R., Greenville, Pa.
C. E. PEIFFER, Master Car Builder, B. R. & P. Ry., Du Bois, Pa.
J. S. LANAHAN, Vice President, Fort Pitt Malleable Iron Co., Pittsburgh, Pa.
E. EMERY, Railway Supplies, 304 Oliver Building, Pittsburgh, Pa.
R. M. LONG, Air Brake Inspector & Instructor, P. & L. E. R. R., McKees Rocks, Pa.
DONALD O. MOORE, Mgr. of Traffic Division, Chamber of Commerce, Pittsburgh, Pa.
J. A. RALSTON, Mechanical Engineer, Union Railroad, Frick Bldg. Annex, Pgh., Pa.

Subject Committee

C. O. DAMBACH, Supt., P. & W. Va. Ry. Co., Wahash Bldg., Pittsburgh, Pa.
KARL BERG, Asst. Supt., Motive Power, P. & L. E. R. R., McKees Rocks, Pa.
S. G. DOWN, Vice President, Westinghouse Air Brake Company, Wilmerding, Pa.

Finance Committee

W. C. HANSEN, Sales Engineer, A. Stucki Co., 419 Oliver Bldg., Pittsburgh, Pa.
T. M. BLAKLEY, R. F. of E., Pennsylvania R. R., 101 Emerson Ave., Aspinwall, Pa.
J. H. CARROLL, JR., Freight Traffic Mgr., B. & O. R. R., 821 Oliver Bldg., Pgh., Pa.
W. P. CUNNINGHAM, Supt. Motive Power, Monongahela Ry., 3169 Ashlyn St., Pgh., Pa.
LLOYD SUTHERLAND, General Storekeeper, P. & L. E. R. R., McKees Rocks, Pa.

Entertainment Committee

CHARLES ORCHARD, Special Agent, Traffic Dept., Carnegie Steel Co., Pgh., Pa.
F. M. BROWN, Supt., P. & L. E. R. R., Pittsburgh, Pa.
ROBERT ROGERS, Sales Agent, American Car & Foundry Company, Pittsburgh, Pa.

Reception Committee

O. L. WRIGHT, District Manager, The Duff-Norton Mfg. Co., Pittsburgh, Pa.
CHARLES J. NIEMAN, Secretary & Treasurer, Penn Iron & Steel Co., Creighton, Pa.
GEORGE F. LAURENT, Sales Engineer, Fort Pitt Malleable Iron Co., Pgh., Pa.
A. B. WHITE, Superintendent, B. R. & P. Ry. Co., Punxsutawney, Pa.
F. I. SNYDER, Vice President and General Mgr., B. & L. E. R. R., Pittsburgh, Pa.
COL. H. C. NUTT, Pres. & Gen. Mgr., Monongahela Railway Co., Pittsburgh, Pa.

Past Presidents

*J. H. McCONNELL.....	October, 1901, to October, 1903
*L. H. TURNER.....	November, 1903, to October, 1905
*F. H. STARK.....	November, 1905, to October, 1907
*H. W. WATTS.....	November, 1907, to April, 1908
*D. J. REDDING.....	November, 1908, to October, 1910
*F. R. McFEATHERS.....	November, 1910, to October, 1912
A. G. MITCHELL.....	November, 1912, to October, 1914
*F. M. McNULTY.....	November, 1914, to October, 1916
J. G. CODE.....	November, 1916, to October, 1917
*D. M. HOWE.....	November, 1917, to October, 1918
*J. A. SPIELMANN.....	November, 1918, to October, 1919
H. H. MAXFIELD.....	November, 1919, to October, 1920
FRANK J. LANAHAN.....	November, 1920, to October, 1921
SAMUEL LYNN.....	November, 1921, to October, 1922
D. F. CRAWFORD.....	November, 1922, to October, 1923
GEO. D. OGDEN.....	November, 1923, to October, 1924
A. STUCKI.....	November, 1924, to October, 1925
F. G. MINNICK.....	November, 1925, to October, 1926
G. W. WILDIN.....	November, 1926, to October, 1927
E. J. DEVANS.....	November, 1927, to October, 1928
W. S. McABEE.....	November, 1928, to October, 1929

*—Deceased.

Meetings held fourth Thursday of each month except June, July and August.

PROCEEDINGS OF MEETING

APRIL 24, 1930

The meeting was called to order at the Fort Pitt Hotel at 8:00 o'clock P. M., with Vice-President Louis E. Endsley in the chair, in the absence of President E. W. Smith.

The following gentlemen registered:

MEMBERS:

Adams, E. R.	Doyle, T. E.
Allen, Harvey	Durkin, James E.
Allison, John	Edwards, C. H.
Altsman, W. H.	Emery, E.
Ambrose, W. F.	En Dean, J. F.
Askin, J. A.	Endsley, Prof. Louis E.
Babcock, F. H.	Emsheimer, Louis
Bain, Clifford	Falkner, A. J.
Ball, Fred M.	Flinn, R. H.
Balzer, C. E.	Forsberg, R. P.
Beck, C. H.	Fox, George W.
Berg, Karl	Frauenheim, A. M.
Berghane, A. L.	Freshwater, F. H.
Burgham, M. L.	Fults, J. H.
Callahan, F. J.	Geisler, Joseph J.
Campbell, C. A.	Gilg, Henry F.
Campbell, J. T.	Glenn, J. H.
Cannon, T. E.	Glessner, G. P.
Carson, John	Goda, P. H.
Clements, F. C.	Gordon, George
Conway, J. D.	Gorman, Charles
Coombe, A. B.	Greene, W. F.
Corcoran, James M.	Hansen, William C.
Cotter, G. L.	Harper, G. C.
Covert, G. W., Jr.	Harper, J. T.
Crenner, J. A.	Hastings, W. S.
Crawford, A. B.	Herrold, A. E.
Dambach, C. O.	Hilstrom, A. V.
Darrall, William G.	Holmes, E. H.
Davis, Charles S.	Hoover, J. W.
Descamp, J.	Horton, H. R.
Diven, J. B.	Huber, H. G.

Hussong, Albert C., Jr.	Rauschart, E. A.
Jones, H. W.	Reardon, John P.
Jones, William J.	Redding, P. E.
Kalik, John R.	Reeve, George
Kaup, E. W.	Ritts, W. H.
Kelly, L. J.	Rizzo, C. M.
Ketchpel, Paul A.	Rumbarger, F. A.
Kranse, H. A.	Saltic, Thomas
Kroske, J. F.	Sattley, E. C.
Lanahan, Frank J.	Sayre, F. N.
Lee, L. A.	Schmitt, Raymond F.
Lehr, Harry W.	Seiss, W. C.
Lobez, P. L.	Shafer, John S.
Long, R. M.	Shannon, David E.
Lowman, John R.	Sheets, H. E.
Ludgate, B. A.	Shellenbarger, H. M.
Lynch, Bernard J.	Sheridan, T. F.
Mauck, E. A.	Smith, C. J.
Meinert, Henry	Stephen, James
Meyers, William F.	Stephensky, J.
Miller, J.	Stevens, L. V.
Mills, C. C.	Stevens, R. R.
Misklow, C. J.	Stillwagon, Charles K.
Misner, George W.	Sutherland, Lloyd
Mitchell, W. S.	Talclet, J. A.
Moir, W. B.	Thomas, Theodore T.
Moyer, Oscar G. A.	Thompson, T. J.
Muir, R. Y.	Tipton, G. M.
Myers, W. H.	Tomasic, T. M., Jr.
McCrea, James G.	Torney, Michael F.
McGinnis, Thomas P.	Triem, W. R.
McKinley, A. J.	Tucker, J. L.
McLaughlin, H. B.	Tyrie, R. M.
McNulty, A. P.	Vandivort, R. E.
Nagel, James	Van Wormer, George M.
Nash, R. L.	Vollmer, Karl L.
Nelson, W. M.	Warner, Russell H.
Norris, J. L.	Wheatley, William
O'Leary, J. J.	Wikander, O. R.
O'Sullivan, John J.	Wildin, G. W.
Paisley, F. R.	Winslow, S. H.
Pringle, P. V.	Wright, Edward W.
Ralston, J. A.	Wright, John B.

VISITORS

Baker, J. H.	Miller, Ted
Banks, William E.	Mycoff, George H.
Bryan, T. B.	Oartel, John A.
Cassiday, David A.	O'Neill, Thomas J.
Cavanaugh, T. J.	Payne, J. R.
Clarkson, G. E.	Penn, William
Corn, Ernest W.	Pickels, H. D.
Fisher, C. S.	Potter, Oscar V.
Flanigan, J. M.	Ramsey, J. P.
Geisler, W. P.	Risan, E. T.
Goodwin, Arthur E.	Roddy, E. G.
Gray, H. M.	Sample, W. E.
Guidotti, Harry	Schaffer, W. E.
Gyekis, J. A.	Schmeltz, O. B.
Heskett, J. Z.	Schmitt, G. A.
Hopple, W. H.	Schubert, C. F.
Hunter, J. F.	Smith, Sion B.
Illar, Peter J.	Stein, J. A.
Irwin, J. J.	Studybaker, A. D.
Johnston, F. D.	Tate, M. K.
Joyce, S. F.	Tomasic, Joseph D.
Jubb, J. S.	Ward, John
Kennelly, D. F.	Ward, John J.
Lewis, S. B.	Warr, Fred E.
Meehan, C. L.	Wiechelt, William L.
Miller, J. C.	Wray, R. W.

Yarnall, Jesse

The call of the roll was dispensed with, the record of attendance being obtained through the registration cards.

The reading of the minutes of the last meeting was dispensed with, as they have appeared in printed form and been distributed to the members.

The Secretary read the following list of applications for membership:

Askin, James A., Purchasing Agent, Fort Pitt Malleable Iron Company, P. O. Box 1054, Pittsburgh, Pa. Recommended by Frank J. Lanahan.

Bell, D. H., Engineer of Equipment, Pittsburgh Railways Company, Homewood Shops, Pittsburgh, Pa. Recommended by R. L. Robinson.

- Cassiday, David A., General Foreman, P. & W. Va. Ry., Central Hotel, Carnegie, Pa. Recommended by T. E. Cannon.
- Fields, A. W., Manager, Transportation Department, James B. Sipe & Company, Chamber of Commerce Building, Pittsburgh, Pa. Recommended by R. L. Robinson.
- Fox, George W., Secretary, Davis Brake Beam Company, Johnstown, Pa. Recommended by Frank J. Lanahan.
- Gray, H. M., Sales Manager, Garrett & Calahan, Toledo, Ohio. Recommended by T. E. Cannon.
- McCarthy, J. T., Assistant Freight Train Master, Pennsylvania Railroad, 82 Duncan Avenue, Crafton, Pa. Recommended by J. G. Dennis.
- Perkins, E. M., Arch Machinery Company, 829 Downtown Y. M. C. A., Pittsburgh, Pa. Recommended by Norman Alderdice.
- Rowe, E. M., Salesman, Chicago Pneumatic Tool Company, 132 Seventh Street, Pittsburgh, Pa. Recommended by J. D. Conway.
- Schaffer, W. E., Back Shop Foreman, P. & W. Va. Ry., 242 Boden Avenue, Carnegie, Pa. Recommended by T. E. Cannon.
- Schmeltz, O. B., Arch Machinery Company, 1663 Memorial Drive, Dormont, Pittsburgh, Pa. Recommended by Norman Alderdice.
- Stillwagon, Charles K., Service Engineer, Davis Brake Beam Company, Johnstown, Pa. Recommended by Frank J. Lanahan.
- Tate, M. K., Manager of Service, Lima Locomotive Works, Inc., Lima, Ohio. Recommended by M. A. Smith.
- Tomasic, Joseph D., Machinist, Pennsylvania Railroad, 505 Greensburg Pike, Turtle Creek, Pa. Recommended by J. D. Conway.

CHAIRMAN: These applications will be referred to the Executive Committee, in accordance with our By-Laws, and upon approval by them the gentlemen will become members without further action.

SECRETARY: Since our last meeting we have been advised of the death of three of our members: S. W. Caton died

February 18, 1930, W. H. Miner died April 3, 1930 and Morris B. Brewster died April 14, 1930.

CHAIRMAN: An appropriate memorial will appear in the next issue of the proceedings.

Is there any further business? If not, we come to the paper of the evening. The speaker is not a stranger to me, although I have not seen him for some time. He was a student at Purdue University at the same time I was there. Mr. Ernest W. Corn, Field Representative, National Safety Council, Chicago, Illinois.

BASIS OF INDUSTRIAL FITNESS

By **ERNEST W. CORN**, Field Representative,
National Safety Council, Chicago, Ill.

Mr. Chairman and Gentlemen: I accepted the invitation to come here tonight with considerable gratification. This happens to be my first appearance before a Railway Club and I am not quite sure to whom I am talking. I am sorry you did not have a roll call to let me know who you fellows are. I might modify my remarks a little bit if I had that information. You know being perfectly at home in the environment is a great help to a speaker. Being uncertain about just where you are is disconcerting to say the least.

Like the man who was operated on for appendicitis one morning; when he came to, his room was all dark and he wondered if he had been unconscious all day. So he called the nurse and asked her if it was night. She said no, they had just pulled the curtains down. He asked her why they had done that, and she replied, "We had a fire across the street a while ago and we were afraid if you saw the flames when you came out from under the anaesthetic you might think the operation had not been successful."

I pride myself on having some breadth of information along a good many lines, but I am telling you at the very beginning that I know nothing about traffic or transportation. I have been in chambers of commerce and traffic offices all over the United States and I see stacks of volumes that I take it are tariffs and schedules and what not and the people talk in terms I can not understand. They do not use my kind of English. I like to use big words but I like to know where to put them.

A little different from the colored preached who liked to use big words. One Sunday morning he saw some white folks in his congregation. They were just completing their colored Baptist church and it was about all finished except some decorating in the baptistry in an alcove at the left of the pulpit. The preacher thought this might be a good time to finish that. So he said "I am so glad to see you white folks this morning. We have had a pretty hard time to build this church. We have done our own work, and it is almost done. Now we would be so thankful to you if you would give us a nice liberal contribution so we can fricassee this abscess here."

There is a certain breadth of approach to the problems of industrial life from the walks of which you come that I thought might be interesting to you tonight. I assume it takes no further introduction than that which you have had of me to know that I am interested in accident prevention. I have heard a lot of hooley about accident prevention, like all great movements. I have heard men say that if you put in your mechanical safeguards you will save 15% to 20% of the accidents. Again, if you carry on a program of education you will take care of 65% of your accidents. Or if you re-arrange your plant and your machinery and properly systematize it you will take care of another percentage, and so on. That is just like a lot of other statements we hear. Nobody can prove them. If you add all the percentages together it would be a good deal like the fellow who had an old Model T car. He read of a man that had a fuelizer that would save 50% of the gas. He got it and put it on. Then he read of some spark plugs that would save 25%. Then he put on a new magneto that was supposed to reduce the consumption of gasoline some more. After he had put on all the things he read about he finally turned on the engine to see what would happen. When he looked under the hood it was dripping gasoline. He put on so many gas saving accessories that the old Ford was actually manufacturing gasoline. If you had all the percentages put together that the safety speakers tell you accidents would be reduced by, you would have about 15% to 20% less than none at all.

So I began endeavoring to find out if there isn't something back of all this stuff we have been talking about, and I came to the conclusion that fundamentally not only in accident prevention production, efficiency and everything else, is a question of the fitness for the job. Just a plain question of whether our

force is fit for the task that has been assigned them or not. I like to talk to employment agents and personnel people. When I worked in a plant we did not employ men, we hired them, and fired them. Now we employ them. And we ask them a lot of questions and they fill out long application blanks that it takes an educated man to read, let alone fill out. Some carry the bluff far enough to make the management believe they can tell by the shape of a man's head or how long his nose is whether he should sweep the floor or run a universal milling machine. We had a set of books come out a few years ago on analysis that convinced a lot of people that one could look at a man and tell him what he was good for. There is nothing wrong with those books except that they won't work. Otherwise they are all right.

I have long since gotten away from the idea that there is anything fundamental in types. I do not believe we have a criminal type, our Italian scientists to the contrary notwithstanding. I remember a meeting in a great auditorium in Pittsburgh in 1917 when a great prison reformer, John Mott Osborn, delivered an address against the theory that there is a criminal type. We noticed a row of men sitting back of him on the platform and we wondered what they were for. When he got through he said, "Now I want to tell you sociologists and analysts"—for it was a convention of sociologists—"I want to tell you who these men are. You probably have wondered. One of them is a paroled murderer; another is a bank robber who has served his time and is now holding a position; another is just a second story petty thief; and the other three are three volunteers that I have picked up who thus far have not served any time. I would be very glad if this great audience tonight would take the responsibility of picking out the murderer, the bank robber, and the second story petty thief." There was no volunteer. None of them looked like criminals to me. Maybe to the next fellow they all looked a little criminal.

I do not believe in that kind of stuff. But I do believe that underneath every one of us there is a set of definite, basic principles of fitness for our employment. I think there is a set of qualifications upon which we build a superstructure of efficiency and usefulness and longevity. And the fact that we fail to have it has been the nightmare of highly organized industry in the United States from its inception. It is plain to you that if we kill 32,500 men, women and children on the

streets in 1930—and we will—there is a percentage of drivers in the United States who are not fit to drive cars. And if we continue to kill in industry 24,000 annually, which will be about the amount, and cripple 155 times that many, it should be evident that there is a bunch of industrial workmen in this country who are not fit for their jobs.

Some of you are railroad men, probably most of you. I had an interesting experience with a bunch of railroad men in Kansas City only a week or so ago. When I said "You represent a group of corporations that are selling transportation on the chain store basis and on the instalment plan," you should have seen their expressions. But that is what they are doing. They sell transportation on a chain store basis and on the instalment plan. I need about 35,000 miles of transportation per year to take care of my job. I can get it in any town I go to. I buy it on the chain store basis. I pay just enough to get me to the next town. I buy it on the instalment plan. Due to the fact that it is merchandised on that basis, service becomes the basic principle of transportation success. We want quick and safe and dependable delivery, and a railroad rises or falls upon basis.

I buy my transportation on the instalment basis and I buy it where I get the best service. And that depends upon fitness of employee very largely.

Let us see if we can not get down to about five basic principles of fitness. First of all I put physical fitness. There never was a time in the history of industry when we were laying as much stress on physical fitness as right now. There never was a time when physical examination was insisted upon by as many companies before they are employed as right now. We talk about physical examinations. We have for a great many years. But we never did anything much about it. We had physical inspection but not physical examination. Some of our corporations are now actually giving physical examinations and periodical checkups as well. They are obliged to do it for two reasons. First the intricate organization of industrial production and the intensity of operation required physical fitness, and secondly the workmen's compensation laws put a load on the employers of the country and they will not take the risk of a physically handicapped man injuring himself or somebody else. If you don't think so, go out and try to find a job if you have a finger off, one eye, a bad back or a hernia, or any one of ten

thousand things that can happen to a man. They will be very sorry but at that particular hour and day they are not taking anybody on.

A lot of you are office men. You may think you can get by without physical fitness because of the type of job you have. Just as soon as you begin to slip, if you have not made a permanent specific task for yourself in that particular institution, some one will slip by you and you will be wondering why Providence is always on the other fellow's side. I believe physical fitness is absolutely the basis of industrial fitness.

The second one is the promise of longevity of industrial usefulness. There was a time when this was not considered at all. I do not know whether there are any cost accountants here or not. We had that pest come into our industrial corporations a few years ago. Nobody ever understood the figures of a cost accountant—except another cost accountant. Nobody knows what he is talking about but we can grasp his totals when he says the cost of labor turnover is so and so. We take his conclusions because we can't tell anything about the process. A great Automobile Company says it costs \$47.50 every time they change a man in their plant. A great oil company represented to me that it cost them \$475 every time they changed a salesman in the Mountain States field. Even the milk delivery men in the United States find that to change a house to house delivery man on a general average costs \$383. The promise of longevity of industrial usefulness—how long are you going to stay. Do you remember those embarrassing questions you have heard asked—"where did you work before you came here?" "Just why did you leave that position?" "Where did you work before that and how long did you work there?" What is he trying to get at?"—"Will you stick or will you stay here a month and then go somewhere else?"

I was a tramp mechanic at one time. You older men remember the days of the tramp mechanic. I remember a blacksmith who lived about a mile from my home whose boy grew up in his blacksmith shop. One morning the old man said "Roll up your apron and put your tools in it and get out of here and see how somebody else runs a blacksmith shop." He made a tramp blacksmith out of that boy for two years and then he came back and lived and died in that shop,—one of the finest blacksmiths I ever saw.

When I was in my late teens I started out with the idea

that I would beg, borrow or steal every mechanical process I could get my eyes on during my experience. I was accepted that way. The idea of labor turn-over or its cost never occurred to me or my boss. I remember being in the Safety Shredder Company in New Castle, Indiana, one morning when a fellow stepped off a freight train in front of our plant and came over and asked for a job. The master mechanic said "Can you run a boring mill?" He said "Yes." He did not "employ" him, he said "There is one down there that needs running." He was hired. Do you know what happened? That fellow had not been there over fifteen minutes when he had a bunch of shredder sills to bore. We had Forrester bits on power machines and we could twist Forrester bits off faster than a wholesale house could furnish them. The man came back and said "Where is your end-wood bits?" "In the rack." "No, there are none there. You don't mind if I make one or two?" Of course the master mechanic did not mind, and he said "Go ahead." He went down and took an old cross wood bit and struck it a couple of times with a file and put it in the boring mill and went to boring with it. We did not care if that man left after two hours. He actually worked five days and was gone. But we never bought any more Forrester bits after that.

That is all changed now. We want to know how long you are going to stay. My advice to you employees is to stay just as long as you can stay. Yes, stay till you get the pension, because you will need it by the time you get it.

The third point is mental alertness and a basis of good judgment. We put a premium on physical fitness when we passed the workmen's compensation acts. We are putting a premium on mental alertness now that we never put there before. There are two kinds of industry that require a type of mental fitness that was never required before. One is the plant that is working like the automotive company with an assembly-line where a man does the same thing over and over again, operating a punch press, getting the hour after hour impact of an out and out rythm. You might say the mechanical mind is perfectly sufficient for that, but it is not. The only mind that can stand that gaff is an active and qualified alert mind. The mechanical mind will break down under that if you don't watch out. Personal efficiency drops down and per man-hour production goes the same way when these breaks come. And I might remind you that a great many otherwise avoidable accidents occur because men do not function quickly enough.

But what do I mean by a basis of good judgment? I can illustrate that by a statement made by a mutual acquaintance of your Chairman and myself, Professor Esterlein, to the Class of 1904 at Purdue University, Seniors in Electrical Engineering. The last time he saw the class he said "Gentlemen, I have spent three years with you on the theory and practice of electrical engineering. I have given you a great many of the details of operation. I can safely predict that before you have been in a power plant sixty days something will occur that never was in a text book and for which I have never given you any specific remedy. But I hope in my association with you I have given you a basis of good electrical judgment that will prepare you to react efficiently upon that particular emergency."

I think that is the finest statement of the basis of good judgment I ever heard. When I get far enough away from home that I am not known I sometimes consider myself a specialist in family case work—the problem of the socially maladjusted family. You realize there is no text book for that sort of thing. The variations of the diseased social structure are so tremendous that the only successful family case worker is a man or woman who has through years of experience built up a basis of good judgment of what to do in any particular instance.

No set of men in industry today can be tied to the apron strings of a superior officer. Almost daily there comes along that for which there is no specific rule or regulation and upon which personal judgment must take charge. The man we are looking for in industry in every capacity is the man who has through years of experience and cultivation and growth built up a basis of judgment that makes him react intelligently and in an efficient manner to the unforeseen and unrulable happenings in his particular job. We are requiring that in industry. I know a piano company not far from Chicago that has not for ten years employed a single man or woman that was not a high school graduate. I know a lot of you may have said what is a high school education worth. You can not sell it for there is not anything in it to sell. The owner of that plant said to me, "I do not care whether they are mechanics or not, I know they have had four years of disciplinary intellectual training and to that extent they are a pretty good lot when I want them to learn my job. They have got the intellectual habit." Men succeed in spite of that. My father said he never had an

education. He learned fractions after he was married. He got by, but he was not in the kind of social competition that I am in today. He was not coming up against the trained intellect of the high school and college graduate like you and I are. It is a basis of intellectual fitness to have an alert, keen intellect, and a basis of good judgment. That is the third.

The next one is an amenability to authority. You railroad men do not need much training on that score. The railroad has worked for years on the theory that the infraction of a rule must carry a penalty. You never got away with it. I do not think a safety rule is worth a hoot that has not a penalty attached to it. We are going to have to teach America all over again a proper regard for constituted authority, whether that authority is the authority of father and mother in the home, the rules and ordinances of a municipality, the state laws or the federal code. If there is any one thing that is wrong in American citizenship today—and I am not a calamity howler—it is a consistent and chronic breakdown of a proper regard for constituted authority. That probably is more strikingly illustrated by the young fellows between 3½ months and 25 years of age, but some of you fellows have caught it as well.

I have been a pleader for twenty years for industrial democracy. I made a statement in 1910 for which I was called an anarchist and a socialist and everything else under the sun except a coward. Nobody ever called me a coward. This is the statement, and I submit that it is not revolutionary: "You can not successfully couch an industrial autocracy in the lap of a political democracy, because the two things do not work together." I do not know of an industrial autocracy in the country. When I made that statement you could hardly find any great industrial corporation that had any semblance of a voice on the part of their employes in the management and operation of the company or the shop conditions. Because of a great war emergency in 1917 it became the order of the day and has been the case ever since.

But you can go too far. I want to tell you that somebody has got to run this job. There are a perfectly definite set of rules and regulations in every industrial corporation that must be adhered to by every employee, and the quickest way to demoralize a plant is to have a bunch in it that do not respect this authority nor carry out the rules of the institution. The quickest way to clean up a situation like that is to put those

fellows outside the fence. The only thing that was wrong with the Russian Army in 1917 was that when the commanding officer ordered them to go forward, they had an election to see whether they would do it or not. They called it Bolshevism; it is democracy gone to seed. That is all there is to it.

There are a lot of people in industry who think they know more than the president and are much more competent to run the institution. It has been my experience, over a good many years, that a man gets to just about the level he is competent to hold. If a man is at the top it is *prima facie* evidence that he is qualified for the job. I do not mean that an advisory relationship should not be maintained. I think that is sound. I can pick out the plants in the United States which have carried that theory to its constructive conclusion and show you in them the plants that in 1930 are as near to realizing the ideal of industrial community life as any in this country. Gentlemen, there is too much at stake. When you take into consideration not only the vast capital in these institutions but the livelihood and the families dependent upon the success of that institution, we can not afford to look at it in any other way. I have seen them wrecked in six months. I have seen them put on the rocks so that they never came back, from just this breakdown of respect for constituted corporate authority.

The manufacture of a commodity, whatever your opinion of it may be, is but the means of livelihood and contentment and life of the American population. And the whole thing is so intricately hinged upon a proper balance of authority and co-operation that the sooner the industrial corporations of the country recognize it by and large and the sooner you men as employees recognize it as a part of a great industrial community, the sooner the forward march of screen doors and bath tubs and vacations and high schools and churches and culture will keep pace in the forward march of American prosperity, industrial and otherwise.

Finally, my fifth basis of industrial fitness is an ability and a willingness to fit into the industrial community in which you find yourself. What do I mean by that? Amiability and a cheerful, co-operative relationship between employees, whatever their station happens to be. Do you remember that old chronic grouch you had to work with, who always came to the plant in the morning with a bad taste in his mouth and you hoped he would have heart failure and get out of the way so the sun

would shine again? Most men have had to work beside somebody like that—the constitutional grouch. It reminds me of the Irishman who was coming into New York harbor and asked the Captain of the vessel if they had a government over here. The Captain said, "Yes, of course they have a government." "Well," said the Irishman, "I am agin it." We have a lot of fellows in the plants in this country who are just constitutionally "agin" anything that happens to come up.

I think, in contrast to some of the men I know, of an old man who lived about three miles from my home. He was a wagon maker, and a good one. I don't think I ever saw a man that nobody could get along with like him. They finally persuaded the old man to join the church and he became a Methodist. As a good church member in those days, he had to have a frock coat. He made an axe handle, and the man who bought it brought it back on Sunday morning and protested that it was brashy. They argued it back and forth for a while, when the fellow made the mistake of calling the old wagon-maker a liar. He just pulled off his frock coat and said, "Lie there, Methodist, until I lick this man." He made the best wagon of any man in that country. It did not make any difference to us how grouchy he was. He worked by himself and it did not make any difference whether he could get along with anybody or not. What would you do with that man in one of the industrial plants of 1930? He could not fit in. He did not have the capacity to become a part of a gang. We have a lot of fellows in both high and low places today who are to a degree that type. That is a frame of mind, a habit of thought. A man can be cheerful and happy just the same as he takes a bath, by habit. A man can be cheerful even to his wife, if he gets into the habit.

Just run back over these elements, physical fitness, promise of longevity of industrial usefulness, mental alertness and a basis of good judgment, amenability to authority and a willingness to cheerfully fit into the industrial group in which we find ourselves—I submit to you, gentlemen, that as the basis upon which we build industrial fitness in this country. That is the basis upon which American industry has to stand because it is based on humanity. And more and more as we develop in this country the human element is being taken into consideration. And just so long as we have that kind of condition when we employ the men, just so long we are going to have to watch it to see that it is maintained.

Physical fitness. How fit are you? Are you physically fit? Do you know that you are physically fit? If not, find out. Some of you would answer me by saying "I am not as young as I used to be." I did not ask how old are you, I asked "are you physically fit." That is not based on years. I have seen fellows physically unfit who were in their twenties. It is a matter of personal care, and about 95 per cent of it is from the ears up. How do you get up in the morning? Is it with a determination to lick that job just like you did five years ago? By exercising those faculties you strengthen the ability to do the thing you do as a routine. The blacksmith's arm never got flabby because he used it. The mechanical brain does not get inactive because you use it.

Another thing. Do you sleep enough? What do you know about it? There are a lot of fellows who think they can get along without sleeping at all, but they can't. Some of these older men went to sleep ten years ago and never have wakened up. How much sleep do you need? I ran a nine months test on myself to find out how much I needed, in 1910. I started with $5\frac{1}{2}$ hours because Edison did, and I nearly died. Then I stepped it up by half hours, applying as tests my weight, my college classification and my disposition. I ran it up from $5\frac{1}{2}$ to 8 hours. At $5\frac{1}{2}$ I lost weight. I was high in classification in two subjects but low in another. I stepped it up and at 8 I found I gained weight but my classification went down. I worked back to $6\frac{1}{2}$ and 7 and I have slept religiously $6\frac{1}{2}$ to 7 hours for twenty years and I stand about as much gaff as most people do and I am physically fit. But I know how much sleep I need. A lot of people sleep too much, more than sleep too little. Find out what you need.

Another thing. Remember there are certain portions of your body that knot up as a result of nerve tension. Find out what they are. I know men who live and work and cuss because they are all knotted up. It ruins your disposition. Develop your physical efficiency. Learn to relax. Our foreign friends say that the one thing that handicaps Americans more than any other is their inability to properly relax. I can look into your faces and see twenty-five men who have been sitting here looking at me for the last fifteen minutes with a strained expression on their faces. Why not relax? You don't have to stick it through! You might just as well ease up. We live in that sort of a strained attitude. First, you know, it hits the

stomach and the kidneys and the general nerve ganglia that take care of the vital organs. Then it may be high blood pressure and cerebral hemorrhage or some other ailment because of the failure of the man to recognize and respect the necessity of proper care of the human body.

Mental alertness. Think about something. We are naturally mentally lazy. Take hold of a mental problem just to think it through. Don't just peck at it. We lay a good deal on providence. Why? Because we are too intellectually lazy to think it through and we say "Let God take care of it." Think these things through. Exercise that brain of yours. Have a hobby and make it an intellectual hobby.

And finally let us in some way or other have a proper regard for the brains and the ingenuity and the organizing ability that has made our job possible. I do not care what you may think or how critical you may be about the authority that is above you, your household, your income, your pleasures, your life are at least for the moment dependent upon the brains behind the executive management in that particular institution. I have had the privilege for a number of years of talking to both sides of the table. I think I know executives in this country. I could regale you by the hour with the heart struggles of men who have tried in every way under the sun to learn again the language that would be properly interpreted by the boys down the line. They are just as human behind the mahogany table as in front of the furnace. They are just as human in the office building as on the track. In every single one of them, with very few exceptions, there is the heart throb of human relationship, and in many instances the loneliest man in the world is the man who wants to reach out his hand and to whom no hand is reached.

I remember walking into the office of a great financial genius of a certain city after I had been cautioned that I should make an appointment and go through all the routine and red tape that was thrown around that man. A graduate of Oxford, worth \$250,000,000 and still a boy. I disregarded all that. I wanted to see him about five minutes on a specific problem. He was chairman of a board I was working for. I went in and said I wanted to see Mr. So and So. The door was open and I said Hello. He said Hello, my boy. I walked alongside of his desk and leaned up against it and looked down into his face. I can see him yet as he sat there looking up at me with a

pipe in his mouth. I talked to him about five minutes and started to go and he said "What is your hurry?" What did he mean? I found out afterwards what he meant. There had been thrown around him a halo of seclusion and he wanted somebody to talk to. I stayed with him an hour and a half. We happened to have attended the same university and we talked about that. We talked about this and that and the other and when I got ready to leave I said "Have I got to go through all this formality when I want to see you?" He said, "I wish you would just come in."

I know from personal experience all over this country that there are employers of labor in executive offices who hold the name of president, who if they could say to you and to every one of their employees what they would like to say, would say just what Helen Gould did when she introduced herself as "just another working girl, but paid in advance." They are all interested in accomplishment. Their blood runs as red as yours. They have family connections, they have children, they have mothers and fathers the same as you. Irrespective of what the rank and file may sometimes feel, in spite of the fact that they are in places of authority, because of their executive ability or by chance or what not, by and large they want it to be an industrial community. You men can carry that particular message to your associates and let us see to it that when the executive reaches his hand across the desk there is one on the other side to grasp it. We will then at least be doing our part in the fulfillment of that fifth basis of industrial usefulness, namely, showing a cheerful, co-operative disposition to fit into the industrial community in which we are earning our livelihood. We will also be doing our part to bring about in our institution the realization of that industrial ideal so beautifully expressed by a great employer of labor when he said that in his plant he made three things—a commodity, efficiently and honestly manufactured and competitively priced to meet a great public demand, money, to pay the interest upon invested capital and to keep the larder well filled and the pot boiling on the hearthstone of his co-workers and men, real men, honored in their industry and a credit to our citizenship.

CHAIRMAN: I am sure we are all glad to have been here this evening. The speaker has given us some very fine points. We all can take them to heart. I do appreciate that when the feeling between the men becomes as the feeling spoken

of tonight should be, there will be less need for safety signs around the shop. But may they stay there now for we need to use them as a reminder now and then of some of the things we do wrong. When a man comes before us, as has been done tonight, and tells us of these things, our attitude toward the other fellow, I might illustrate it by a little occurrence that happened just yesterday. A young man came in to see me, as mad as a hornet, and he had to spill it to somebody. He told me his troubles, and I said, "Joe, was the other fellow sincere?" He said, "Yes, but he was wrong." I said, "Don't get mad at him just because he is wrong, if he is sincere." Only get mad at the crook, not at the fellow workman who is sincere. Remember that. Because if a man is sincere, he has just as good a right to his opinion as you do to yours.

I am sure there are several men here who will wish to discuss this topic. Mr. Oartel, of the Carnegie Steel Company Welfare Work, ought to tell us something along this line.

MR. J. A. OARTEL: I don't know, there is not much to be said after Mr. Corn has covered the ground so thoroughly. I have not had quite the college background that Mr. Corn has had, having come up from the ranks through a steel mill, but from the experience gained there and later as an executive getting around the country I have learned quite a bit especially on the safety side, and I want to endorse all Mr. Corn has said. I think I can say from experience that we are realizing in America today the ideal he has set up. It is very gratifying to know that we are tending in that direction. Employer and employee are getting closer together. I am very sure the very line Mr. Corn and I are interested in has brought them closer together. When the president and the superintendent and the foreman and the ordinary workman come to sit around a common table and discuss a subject in which they are all interested, the preservation of the life and limb of the workers in that shop, a question on which there is no argument of course, they are all drawn closer together. They go out from that safety meeting with this thought in mind. I am very sure it tends to bring them closer together along a lot of other lines also. I thank you.

CHAIRMAN: Mr. Clarkson, Secretary of the National Safety Council, we would like to hear from you.

MR. G. E. CLARKSON: Mr. Chairman and Gentlemen: I had hoped Mr. Corn as a sort of climax to his wonderful talk would mention something he has had on his mind for the last couple of weeks and something that I, too, have had pretty much on my mind, so much so that if I said anything tonight it could not possibly be anything else than about this very project we have been trying to carry to completion. We have been in the throes of a safety campaign in Pittsburgh and Western Pennsylvania for the past couple of weeks. This week it is being intensified by a drive. Some 128 people in Allegheny County are out today, and possibly 300 others in the surrounding counties, Washington, Westmoreland, Fayette, Armstrong, Beaver, making an appeal to our industrial concerns and organizations and institutions—and by the way individuals—to get together \$200,000 to be spread over a period of five years and to be devoted to accident prevention and safety work in the Pittsburgh district. We had a meeting the other night, our first important report meeting, and I was encouraged very much by the reports that were made after one day's work, amounting to about \$60,000 of the \$200,000 we are going out after. I hope by tomorrow night when we have our Victory Dinner in the Chamber of Commerce we will be able to report that we have gone over the top and have the \$200,000 we want for this five years set up for accident prevention in this community.

Just at this time I desire to say I am not going to leave you without asking you—not for any contribution yourself before you leave the room, but to do what you can by word of mouth at least, and if any of you hold the purse strings of some organization, loosen up a bit when the matter comes to your attention. And the end is just this. I do not know how it can be better expressed than by a little occurrence that happened not long ago. Among the many activities we conduct in Western Pennsylvania is the Inter-Fleet Contest, involving 4,300 drivers. In six months experience the accident frequency rate has been cut from .75 per 1,000 to .39 per 1,000 hours. This means the saving of money to these fleet owners in the city of Pittsburgh and it means a great deal more to the person that is kept from injury and damage.

One of those truck drivers came into my office not long ago. I will not use the language he used but the language that I think pictures the idea he had in mind. He said, "With

a wave of the hand and a kiss thrown on the breeze to the sweetest little pal in all the world I stood for a moment watching her, that chubby little figure in blue and white, that important little personage, on her way to school. She turned the corner and was out of my sight in a moment." He said, "Mr. Clarkson, it must have been about 4 o'clock, my mind has been sort of deadened since that, the boss sent for me and, placing his arm around my shoulders in a sympathetic sort of way said, 'Bob, there has been an accident, you better hurry home.'" "Well," he said, "there isn't very much more to tell. That little pal of mine was not waiting and watching at the window for me as usual. For an instant I faltered and had to fight for breath. In a little while I went down to the gate as I had done that very morning and I looked down the street as best I could, and right over there, a short block away, was where she turned the corner and passed out of my life forever. To-day it was my little girl. Tomorrow and the next day it will be some other little pal, quite as dear, and so on and on until the conscience of men cries halt to this fast, careless, indifferent driving, in places of danger, that stares drivers plum in the eyes. What are you going to do about it? Can't you do something? It was my little girl that was killed. Isn't somebody going to do something about it?"

Well, gentlemen, the whole purpose of this campaign is to get some money to do something about it, if nothing else, to stiffen the back bone of those whose duty it is to see that the streets are properly used, that the man at the wheel does not dash down the street regardless of human life. I appeal to you to do what you can to help us out in this campaign.

CHAIRMAN: Mr. Babcock, Pittsburgh and Lake Erie Safety Agent, can you add something to the discussion?

MR. FRANK H. BABCOCK: Mr. Chairman, I think the picture Mr. Corn has presented tonight is the solution of our accident prevention problems. I hesitate to take up any of your time in a way which might detract from the force of what Mr. Corn has so clearly said, and I want you to go away with a full conception of his meaning.

MR. R. P. FORSBERG: Mr. Chairman, as I have listened with the deepest interest to the instructive and entertaining address that Mr. Corn has just given us, the thought came to

me that our Club is under a deep debt of gratitude to him for the real contribution he has made to our Proceedings. I am confident that I express the sentiment of each one in this audience when I say that we will await with much interest the issue of our Proceedings that will contain this address, in order that we may by reading it fix more permanently in our minds the five points that he has given to us.

It is my pleasure therefore to move that by a rising vote we tender to Mr. Corn our sincere thanks for the real service that he has shown us.

The motion was duly seconded and prevailed by unanimous rising vote.

Following adjournment a delightful program of music, both vocal and instrumental, was rendered by the Red Arrow Quartette and Golden Arrow Orchestra, composed of employees of The Pennsylvania Railroad, after which a vote of thanks was extended to these organizations and to The Pennsylvania Railroad for the pleasure they have afforded the Club.

J. D. CONWAY, Secretary.

In Memoriam

S. W. CATON

Died February 18, 1930

W. H. MINER

Died April 3, 1930

MORRIS B. BREWSTER

Died April 14, 1930

STATEMENT OF THE OWNERSHIP, MANAGEMENT,
CIRCULATION, ETC., REQUIRED BY THE ACT
OF CONGRESS OF AUGUST 24, 1912.

Of Official Proceedings—Railway Club of Pittsburgh, published Monthly, except June, July and August, at Pittsburgh, Pa., for April 1, 1930.

STATE OF PENNSYLVANIA }
COUNTY OF ALLEGHENY } ss:

Before me, a Notary Public in and for the State and county aforesaid, personally appeared J. D. Conway, Secretary, who having been duly sworn according to law, deposes and says that he is the Editor and Publisher, of the Official Proceedings—Railway Club of Pittsburgh.

Publisher Official Proceedings—Railway Club of Pittsburgh.

Editor, J. D. Conway, 515 Grandview Avenue, Pittsburgh, Pa., (19th Ward.)

Managing Editor, J. D. Conway, 515 Grandview Avenue, Pittsburgh, Pa., (19th Ward.)

Business Manager, J. D. Conway, 515 Grandview Avenue, Pittsburgh, Pa., (19th Ward.)

President, E. W. Smith, Pittsburgh, Pa.

Vice President, Prof. Louis E. Endsley, Pittsburgh, Pa.

Secretary, J. D. Conway, Pittsburgh, Pa.

Treasurer, E. J. Searles, Pittsburgh, Pa.

Known Bondholders—None.

J. D. CONWAY.

Sworn to and subscribed before me this 31st day of March, 1930.

(Seal)

SUE B. FRITZ, Notary Public.

(My commission expires February 21st, 1931.)

R E S E R V E D

CAR LIGHTING

COMPLETE EQUIPMENT
ELECTRIC OR GAS



The Safety Car Heating and Lighting Co.

New York Chicago St. Louis Boston Philadelphia San Francisco Montreal

RAILWAY STEEL-SPRING CO.

Springs, Steel-Tired Wheels,
Locomotive and Car Wheel Tires.
Pressed Steel Journal Box Lids.

GENERAL OFFICE, 30 CHURCH STREET, NEW YORK

BRANCH OFFICES—Chicago, St. Louis, St. Paul, Richmond, Denver,
San Francisco, Dallas, Montreal, Que., Pittsburgh, Detroit, Cleveland

USED (Service-tested) A. R. A. FREIGHT CAR PARTS

Answering the four questions of chief importance:

QUALITY—Safe as Unused Parts if not actually Safer

QUANTITY—Substantial Volumes

CONDITION—No more trouble using than Unused Parts

SAVING—Very Satisfying

Are you receiving our Stock Lists? Write for them and our
interesting proposition.

BRIGGS & TURIVAS, Inc.

Cars (Retired and Second-Hand) and CAR PARTS
of All Kinds

Pittsburgh District Address: Imperial, Pa.

Phone: Imperial 132

General Office: Blue Island (Chicago) Illinois.
Plants: Blue Island, Ill. Chicago Heights, Ill. Pittsburgh, Pa.

Davis "One-Wear" Wheels Require No Re-turning

Davis Wheels are truly "One-Wear".

Each wheel is made of a special composition, heat-treated steel which extends wheel life, relieves shop maintenance and eliminates re turning.

With its qualities of maximum strength, dependability and light weight, Davis "One-Wear" steel wheels give continuous service without contour conditioning.

AMERICAN STEEL FOUNDRIES

New York

CHICAGO

St. Louis

YOUNGSTOWN

ALL STEEL CORRUGATED FREIGHT CAR DOORS

CAMEL

FREIGHT CAR DOOR FIXTURES

Weather and Burglar Proof

Top or Bottom Supported

CAMEL SALES COMPANY

332 South Michigan Avenue

CHICAGO, ILLINOIS

Pressed Steel Car Co.

MANUFACTURERS OF

FREIGHT and PASSENGER

-:- CARS -:-

CASTINGS

FORGINGS

BOLSTERS

BRAKEBEAMS

TRUCKS

UNDERFRAMES

GREY IRON WHEELS

COMPLETE FACILITIES FOR REPAIRING CARS

OFFICES

New York

Pittsburgh

Chicago

St. Paul

Standard Steel Car Co.

OFFICES

General Offices: Frick Bldg., PITTSBURGH, PA.
NEW YORK, 170 Broadway
CHICAGO: Fisher Building

WORKS

Butler, Pa.
New Castle, Pa.
Hammond, Ind.

STEEL AND COMPOSITE

FREIGHT CARS

For all Classes of Service, from our Standard Designs,
or according to Specifications of Purchasers.

Steel Car Underframes

TRUCKS, BOLSTERS, BRAKE BEAMS, ETC.

Capacity 50,000 Cars per Annum INQUIRIES
SOLICITED

Union Steel Casting Company

Pittsburgh, Pa.

Cast Steel Locomotive Frames, Driving Wheel
Centers, Locomotive Steel Cylinders and
Miscellaneous Steel Castings

Vanadium, Nickel and other Alloy Steel Castings a
Specialty

CAR HEATING SPECIALTIES

Use "VAPOR"

{ Metallic Two-inch Steam Con-
nections between all Cars.

{ Automatic Temperature Control
Vapor System on all Cars.

VAPOR CAR HEATING CO., Inc.

Railway Exchange - Chicago, Ill.

GENERAL REFRACTORIES COMPANY

Home Office
PHILADELPHIA, PA.

Manufacturers of High Grade Fire Brick
For All Railroad Purposes

Locomotive Arch Brick
Direct from Manufacturer to Consumer

Consignment Stocks, Prompt Deliveries
Quality and Service Assured

RAILWAY SALES DEPARTMENT
Graybar Building—420 Lexington Avenue
New York City



H. & K.
Double Rotating Chair
No. 900

CHAIR CAR COMFORT IN DAY COACHES

These Luxurious Chairs

—bring to a focus the steady improvement made in Hale & Kilburn car seats during the last half century. The tendency in this development has been constantly towards greater comfort, larger and more commodious seats, softer springs and greater beauty.

Hale & Kilburn Co.
General Offices and Works:
1800 Lehigh Ave., Philadelphia

NATHAN

MECHANICAL LUBRICATORS

WATER COLUMNS INJECTORS LUBRICATORS
LOW WATER ALARMS

Locomotive and Stationary Boiler Fittings

NATHAN MANUFACTURING CO., 250 Park Avenue, New York

From the Early Period
of the Telegraph to the present
remarkable development in the field of Electricity

KERITE

has been continuously demonstrating the
fact that it is the most reliable and
permanent insulation known

THE KERITE INSULATED COMPANY INC
WIRE & CABLE
NEW YORK CHICAGO SAN FRANCISCO



Performance!



CONSIDER the locomotive in the broad light of a means of producing transportation.

Viewed in this light, the value of a locomotive to the railroad is measured by its ability to produce maximum gross-ton-miles-per-hour economically.

Stoker fired locomotives haul more tons and at higher speeds because they increase the sustained steam capacity of the locomotive.

The added locomotive earning power resulting from stoker firing justifies stoker application to any locomotives, large or small.

THE STANDARD STOKER COMPANY, Inc.

New York

Erie

Pittsburgh

VULCAN

CRUCIBLE STEEL COMPANY

Established in 1900

ALQUIPPA, PA.

*Makers of the better grades of Tool Steel, and the
pioneers in the manufacture of high quality
Vanadium Steels.*

KING

METALLIC

for Locomotive Piston
Rods, Valve Stems and
Air Pumps.



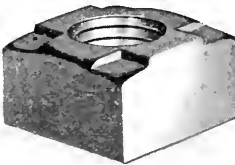
PACKINGS

King Sander
Security Latch
King Indestructible Oil Cups
King Hand Boring Lathe
Gollmar Bell Ringer
Leach Sanders

Reg. U. S. Pat. Off.

THE U. S. METALLIC PACKING CO.

PHILADELPHIA, PA.



The Grip Unit Nut— —1930 Model

New developments and devices are interesting, but the proven products of long experience are more reliable. That is why men in positions of responsibility demand experience-proven products—demand facts.

Grip Nut Company, following their policy of continuous evolution towards perfection, offer the result of their labor—better, more efficient, more economical products.

GRIP NUT COMPANY

5917 South Western Avenue

Chicago, Illinois

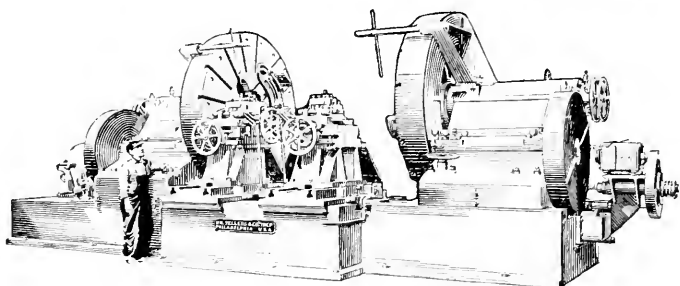
TUCO PRODUCTS CORPORATION

Tucolith Composition Flooring
Flexolith Composition Flooring
Royal Adjustable Car Window Screens
National Standard Steel Trap Doors
Universal Steel Trap Doors
Trap Door Locks and Holders
Tuc National Standard & Traction Roofing
Tuc Specially Treated Cab Curtain
Material
Tucocendur Plates

Tuco Long Wear Floor Dressing
Resisto Hairfelt Insulation
Tuc Rockwul-Jacket Insulation
Tucark Insulation for Car Floors
Tuc Floor Plate Preservative
Eclipse Deck Sash Ratchets
Steel Car Sheathing, Panels and Slats
Reliance Sash Balances
Perfection Sash Balances
Brown Window Sash Weatherstrips

30 Church Street,
New York

Railway Exchange Building,
Chicago



Railroad Shop Tools

Driving Wheel Lathes

Car Wheel Lathes

Axle Lathes

Driving Box Boring and Facing Mills

Car Wheel Boring Mills

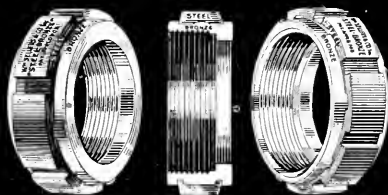
Boring and Turning Mills

Tool Grinders

Drill Grinders

WM. SELLERS & CO., Incorporated

PHILADELPHIA, U. S. A.



SELLERS Steel Bronze Coupling and Hose Nuts

Possess all the advantages of both all-steel and all-brass nuts and eliminate their objectionable features. The bronze lining is cast by a special process within the steel band and is united to it by cross ribs, dovetails and internal lugs, forming one solid piece. Furnished in sizes interchangeable with railroad nuts.

Adopted as standard by many large railroad systems

WM. SELLERS & CO., Incorporated
Injector Dept. PHILADELPHIA, U. S. A.

BOILER COMPOUNDS

SOOT REMOVER



Buckeye Chemical Co.

Factory and Laboratory:

DETROIT, MICH.

Pittsburgh, Pa.
5621 Wellesley Ave.
Montrorse 1362

Rochester, N. Y.
82 St. Paul St.
Main 3084

Over Thirty Years Serving the Engineer

Donated by A Friend

for welding and cutting

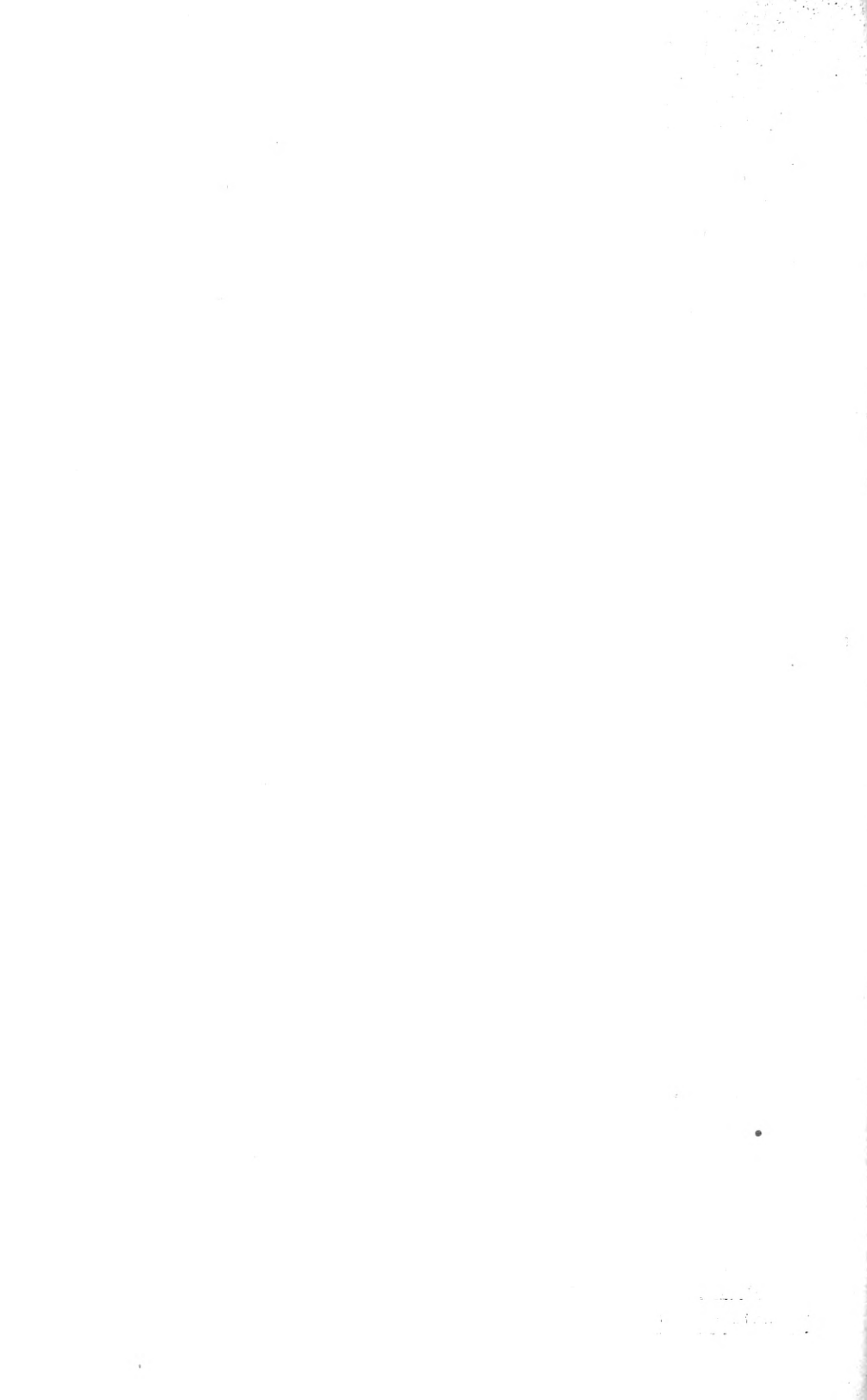


in the railroad shops of Pittsburgh district and thruout the country —
Airco Oxygen—Airco Acetylene—Airco-Davis-Bournonville Welding and Cutting Apparatus—Supplies.

AIR REDUCTION SALES CO.

Pittsburgh—1116 Ridge Avenue

New York—342 Madison Avenue



**OKONITE (RUBBER) and VARNISHED CAMBRIC
INSULATED WIRES and CABLES**

Manson Tape

THE OKONITE COMPANY

Okonite Tape

Founded 1878

THE OKONITE-CALLENDER CABLE COMPANY, Inc.

Factories: Passaic, N. J. - Paterson, N. J.

Sales Offices:

New York - Chicago - Pittsburgh - St. Louis - Atlanta
Birmingham - San Francisco - Los Angeles - Seattle - Dallas



SUPERHEATERS

DESIGNING ENGINEERS AND MANUFACTURERS
OF ELESKO STEAM SUPERHEATERS FOR
LOCOMOTIVE, MARINE AND STATIONARY
BOILERS



FEED WATER HEATERS, EXHAUST
STEAM INJECTORS AND PYROMETERS
FOR LOCOMOTIVES

17 East 42nd Street
NEW YORK

THE SUPERHEATER COMPANY

Peoples Gas Building
CHICAGO

OFFICIAL PROCEEDINGS
RAILWAY CLUB OF PITTSBURGH
\$1.00 Per Year 25¢ Per Copy

Vol. XXIX

MAY 21, 1930

No. 7

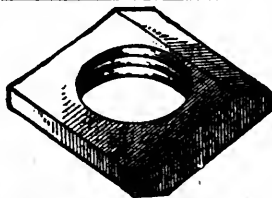
Reducing Railroad Material Handling Costs

By J. V. MILLER,

Assistant General Storekeeper, C. M. St. P. & P. R. R., Milwaukee, Wis.

Steel Car Forge Company
PITTSBURGH, PENNSYLVANIA

FORGINGS



Dieter Lock and Holding Nuts

**STANDARD SAFETY NUT
CORPORATION**

30 CHURCH ST.

NEW YORK

LOX-ON DEVICES CORPORATION

PAUL W. DIETER, President

30 CHURCH STREET

NEW YORK CITY

LEWIS IRON, "The Iron Superior"

Penn Iron & Steel Company, Creighton, Pa.

SOLE SALES AGENTS,

Joseph T. Ryerson & Son, Inc., Chicago, Ill.

OFFICIAL PROCEEDINGS
OF
The Railway Club of Pittsburgh

Organized October 18, 1901

Published monthly, except June, July and August, by The Railway Club of Pittsburgh, J. D. Conway, Secretary, 515 Grandview Ave., Pittsburgh, Pa.

Entered as Second Class Matter February 6, 1915, at the Postoffice at Pittsburgh, under the Act of March 3, 1879.

Vol. XXIX
No. 7.

Pittsburgh, Pa., May 21, 1930

\$1.00 Per Year
25c Per Copy

Starrett



The Standard
For Accuracy



Cut Quicker
Last Longer



Accurate
Reliable

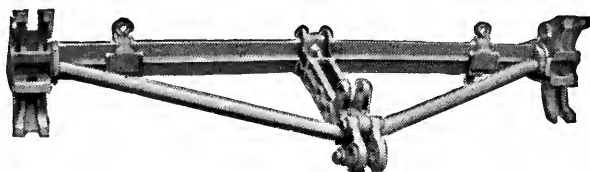
THE L. S. STARRETT CO., ATHOL, MASS., U. S. A.

BRAKE BEAMS

"Solid Truss"
and
Built-Up Types

AND

Brake Beam Supports



DAVIS "SOLID TRUSS" PASSENGER BEAM

ALSO

Pressed Steel Journal Box Lids

DAVIS BRAKE BEAM CO.

JOHNSTOWN, PA.

Sales Office: 418 Sixth Avenue, Pittsburgh, Pa.

GOULD

Side Frames Bolsters Couplers
 Passenger and Freight Journal Boxes
 Open Hearth Steel Castings

THE GOULD COUPLER CO.

NEW YORK

WORKS: DEPEW
 CLEVELAND

CHICAGO



CANDIES

Everybody likes Candy—with almost a thousand candies from which to make your selection, we can truthfully say that we have a variety to suit every taste—a box suitable for every occasion.

Lacquers
 Varnish
 Enamels
 Oil Colors



REG U S PAT OFF.

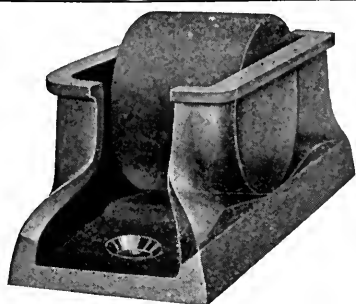
Railway and
 Industrial
 Protective
 Coatings

JAMES B. SIPE AND COMPANY
 PITTSBURGH, U. S. A.

The Q & C Company, 90 West St., N. Y. C.

Peoples Gas Building - - Chicago
 Railway Exchange Building - St. Louis

**Manufacturers of Track, Car and Engine
 Specialties**



STUCKI Side Bearings

A. STUCKI COMPANY
OLIVER BUILDING
PITTSBURGH, PA.

Canadian Representative
THE HOLDEN CO., LTD.
Montreal, Canada.

SINGLE PLATE CHILLED TREAD WHEELS

With

Reinforced Flanges for the Most Severe Service
Over 500,000 in Service

SOUTHERN WHEEL COMPANY



*Our tests determine the best
shoe for each type of service.*

The American Brake Shoe and Foundry Company

230 Park Ave., New York

332 So. Mich. Ave., Chicago

The Pocket List of Railroad Officials

*Used by the Officers of all Railroads on
The North American Continent*

Issued Quarterly

Subscription Price, \$6.00 per annum

Single Copies, \$2.50

Advertising rates on application

THE OFFICIAL RAILWAY EQUIPMENT REGISTER ISSUED MONTHLY

Descriptive of freight and passenger cars of the Railways and
Private Car Companies in the United States, Canada and Mexico.

Subscription Price, \$15.00 per annum.

Single Copies, \$2.00.

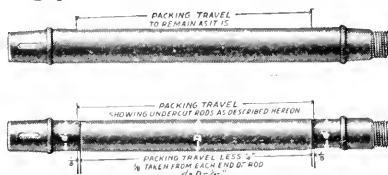
THE RAILWAY EQUIPMENT AND PUBLICATION CO.

J. ALEXANDER BROWN, Vice-President and Manager

424 West 33rd Street

New York

IF WE stated we could sell you the same steel you are now using for your piston rods at half the price you are paying, you would be greatly interested. Well, we can practically do that and make an additional saving of half the cost of labor required in preparing the rod for the engine by undercutting, as illustrated in cut below, instead of grinding or turning the wearing surface. That practice will extend the life of the rod fifty per cent or more. Paxton-Mitchell Metallic Packing will pack its own wear steam-tight until a rod has been reduced one-quarter of an inch. You will also save the cost of one set of packing, one sliding plate and one cone each time engine is in for general repairs.



Half sets of our packing segments may be reclaimed from scrap for use in making at least fifty per cent of renewals due to the four segment combination of our packing, which practically reduces the cost of making the renewals one-half.

"The Packing That Packs"

The Paxton-Mitchell Company
OMAHA, NEBRASKA

NATIONAL FRICTION DRAFT GEAR

The Perfect Shock Absorber

Requires No Re-Adjustment

NATIONAL MALLEABLE AND STEEL CASTINGS CO.

General Office — Cleveland, O.

"Outside" softening for removal of scaling salts, does not completely solve the water treatment problem.

Dearborn Scientific Treatment provides the supplementary correction needed to complete the treatment and free the water of corrosive and foaming tendencies.

DEARBORN CHEMICAL COMPANY

310 S. Michigan Avenue, Chicago 205 East 42nd Street, New York
Farmers Bank Bldg., Pittsburgh



SYMINGTON

Malleable Iron and Steel Journal Boxes
for Passenger and Freight Equipment
FARLOW DRAFT ATTACHMENTS
THE SYMINGTON COMPANY
New York Chicago Boston Baltimore Rochester Cleveland

BALL'S
Varnish Remover

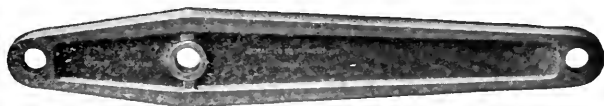
OXOLIN
REGISTERED
THE IDEAL PAINT OIL

B. C.
Spirits

Ball Chemical Company

CHICAGO Office,
63 W. Van Buren Street. Fulton Bldg., PITTSBURGH, PA.

Schaefer Drop-Forged Brake Levers



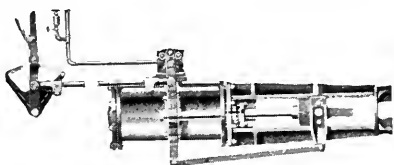
Designed to give uniform stress conditions throughout entire body of lever. Levers are drilled from templets and exact spacing between holes is thus assured.

Drop forging makes all levers uniform.

Lighter in weight with increased strength.

Schaefer Equipment Co.

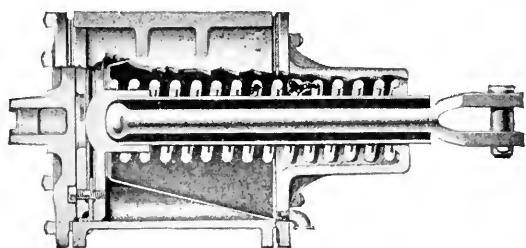
General Offices: Koppers Bldg., Pittsburgh, Pa.



ALCO REVERSE GEAR

THE Alco Reverse Gear was designed to meet the demands of diversified service. While it serves acceptably in heavy freight service, it responds equally well to the needs of high speed passenger requirements. Again, in fast freight, helper and switching service it gives quick and accurate valve gear adjustments. In other words, it meets the conditions imposed in all classes of service—it does not excel in one at the expense of another.

AMERICAN LOCOMOTIVE COMPANY
30 CHURCH STREET NEW YORK CITY



This New Protector Keeps Cylinders Clean

A collapsible water-proof hood that prevents moisture and dirt from reaching the cylinder walls. Lengthens life of packing cups, reduces leakage, decreases maintenance cost. . . Ask for Circular Notice 1082.

Westinghouse Air Brake Co., Wilmerding, Pa.

From Lamps to Locomotives



The Westinghouse Electric and Mfg. Co. is prepared to take care of your *every* electrical need.

When thinking electrically,
think—

Westinghouse

Grant Building

Pittsburgh, Pa.

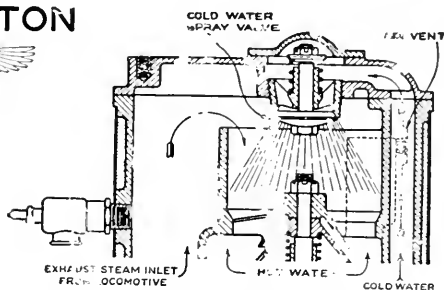
High-Powered Locomotives For All-Around Service

The fine work which is being rendered on a number of railroads by Baldwin locomotives designed for both passenger and freight service, indicates that this type of power will be extensively used in the future, where conditions are favorable. We will co-operate with any railroad in designing such power.

THE BALDWIN LOCOMOTIVE WORKS

PHILADELPHIA

WORTHINGTON



The Secret of Worthington Feedwater Heater Efficiency —direct contact of water and exhaust steam

Scale and bad water have no effect on the temperature of feedwater delivered by the OPEN TYPE HEATER.

WORTHINGTON PUMP and MACHINERY CORPORATION

Works: Harrison, N. J. Cincinnati, Ohio. Buffalo, N. Y. Holyoke, Mass.

Executive Offices: 2 Park Avenue, New York, N. Y.

GENERAL OFFICES: HARRISON, N. J.

District Offices in 24 U. S. Cities.

Branch Offices or Representatives in Principal Cities of all Foreign Countries

H-9 F

Factors that Increase Locomotive Effectiveness



The Locomotive BOOSTER

Franklin Railway Supply Co., Inc.

17 East Forty-Second Street, New York

Chicago, Ill.

St. Louis, Mo.

San Francisco, Ca.

332 S. Michigan Ave.

Boatmen's Bank Bldg.

774 Monadnock Bldg.

Franklin Railway Supply Company, Limited, Montreal

Export Department—International Railway Supply Co.

30 Church Street, New York

STAYBOLTS FOR ANY BOILER REQUIREMENT

F. B. C. Welded, TATE Threaded,
and Flannery Two-Piece
Flexible Staybolt Assemblages

NU-TATE and TELL-TALE Bolts

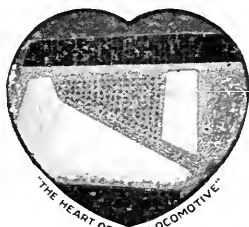
Crown Stays and Rigid Bolts
(STRAIGHT OR REDUCED BODIES)

Bulletins Describing all Flannery
products mailed upon request.

FLANNERY BOLT CO.

FLANNERY BLDG.

PITTSBURGH, PA.



Nicholson Thermic SYPHONS

Thermic Syphons provide safety from the
"most dreaded accident," the boiler explosion
caused by low water which takes toll of many
lives and millions of dollars annually.

LOCOMOTIVE FIREBOX CO.,

Chicago

New York

Montreal

Hunt-Spiller Air Furnace Gun Iron

HAS THE
Strength and Wearing Qualities
THAT ARE ABSOLUTELY NECESSARY IN
LOCOMOTIVE CASTINGS

PRICES MODERATE

Manufactured Only By

RESULTS GREAT

Hunt-Spiller Manfg. Corporation

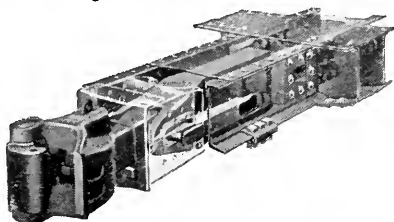
J. G. PLATT, President and General Manager

OFFICE AND WORKS:
383 DORCHESTER AVENUE
SO. BOSTON, MASS.

V. W. ELLET.
Vice President

The Buckeye Steel Castings Co.

COLUMBUS
NEW YORK
CHICAGO



ST. PAUL
LOUISVILLE
LONDON

"BUCKEYE" Yoke and Draft Attachments

FORT PITT SPRING COMPANY

PITTSBURGH, PA.

SPRINGS BOTH COIL
& ELLIPTIC

For Railroad Service

ALLOY SPRINGS A SPECIALTY

Malleable CASTINGS OF UNIFORM QUALITY ARE PERMANENT

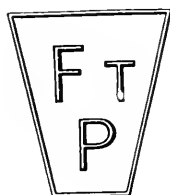
CURRENT AVERAGE TESTS

For 12 Months

910 Consecutive Heats

Tensile Strength, Yield Point Elong. %
Lbs. per sq. in. Lbs. per sq. in. in 2 in.

HIGH	61370	40420	28.1
LOW	56490	37210	22.6
AVERAGE	58344	38494	25.9



*This Trade-mark is your security on
Railroad Car Castings*

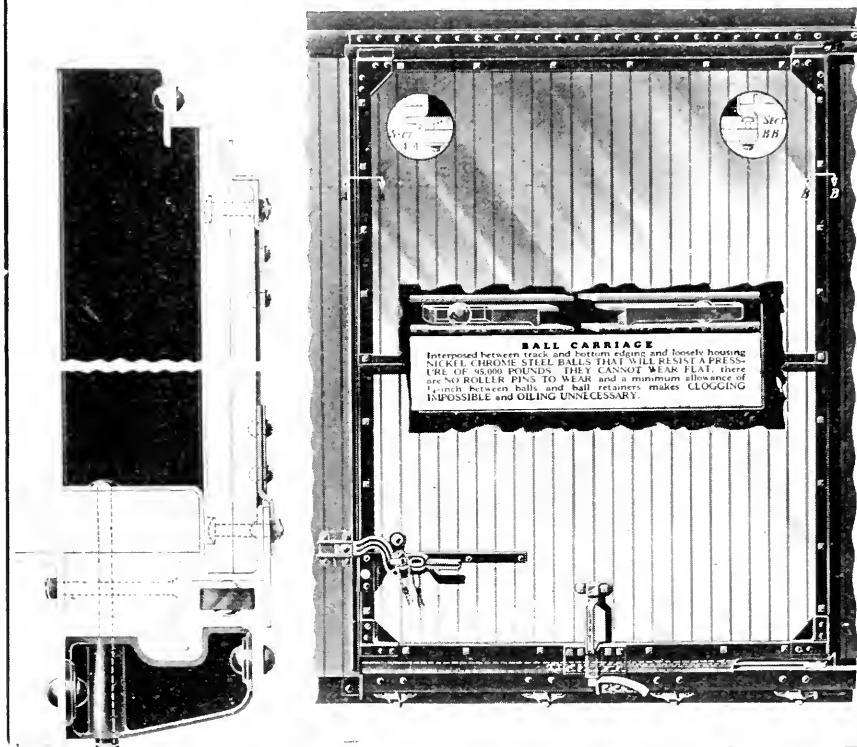
Send Blue Prints for Estimates

Fort Pitt Malleable Iron Company
PITTSBURGH, PA.

INDEX—ADVERTISERS.

NAME	Page	NAME	Page
Air Reduction Sales Co.....	xxiv	Penn Iron & Steel Co.....Front	Cover
American Brake Shoe & Foundry Co.....	iii	The Pocket List of Railroad Officials	iii
American Locomotive Co.....	vi	Pressed Steel Car Co.....	xviii
American Steel Foundries.....	xviii	The Q & C Co.....	ii
Baldwin Locomotive Works....	viii	Railway Equip't. and Publication Company	iii
Ball Chemical Co.....	v	Railway Steel Spring Co.....	xvii
Briggs & Turivas.....	xvii	Reymer & Bros., Inc.....	ii
Buckeye Chemical Co.....	xxiv	Safety Car Heat. & Lighting Co..	xvii
The Buckeye Steel Casting Co.	xi	Schaefer Equipment Co.....	v
Camel Sales Co.....	xviii	Wm. Sellers & Co., Inc.....	xxiii
Chicago Railway Equip. Co.....	xlii	Sipe, James B., & Co.....	ii
Davis Brake Beam Co.....	i	Southern Wheel Co.....	iii
Dearborn Chemical Co.....	iv	Standard Safety Nut Corp. Front	Cover
Flannery Bolt Co.....	x	Standard Steel Car Co.....	xix
Fort Pitt Malleable Iron Co.....	xi	The Standard Stoker Co.....	xxi
Fort Pitt Spring Co.....	xi	The L. S. Starrett Co.....Inside Front	Cover
Franklin Rwy. Supply Co., Inc.	ix	Steel Car Forge Co.....Front	Cover
General Refractories Co.....	xx	Stucki Co., A.....	iii
The Gould Coupler Co.....	ii	The Superheater Co.....Front	Cover
Grip Nut Co.....	xxii	The Symington Co.....	v
Hale & Kilburn Co.....	xx	Tuco Products Corp.....	xxii
Hunt-Spiller Mfg. Corporation	x	Union Spring & Mfg. Co.....	xiv
The Kerite Insulated Wire & Cable Co., Inc.....	xxi	Union Steel Casting Co.....	xix
Locomotive Firebox Co.....	x	U. S. Metallic Packing Co.....	xxii
Lox-On Devices Corp.....Front	Cover	Vapor Car Heating Co., Inc.....	xix
Nathan Mfg. Co.....	xx	Vulcan Crucible Steel Co.....	xxii
National Malleable and Steel Castings Co.	iv	Westinghouse Air Brake Co.....	vii
The Okonite-Callender Cable Company	Front	Westinghouse Elec. & Mfg. Co.	vii
Paxton-Mitchell Co.....	iv	Worthington Pump and Machinery Corporation	ix

THE BALL BEARING CAR DOOR



It Eliminates

FRICTION

DAMAGED GUIDES

FLATTENED ROLLERS

NECESSITY OF OILING

PILFERING

BROKEN HANGERS

WEAR OF ROLLER PINS

"BUTTING" IN TRANSIT

SNOW AND ICE FROM THE TRACK

UNSATISFACTORY OPERATION DUE TO INACCURATE MACHINING

UNSATISFACTORY OPERATION DUE TO CORROSION

MANUFACTURED and SOLD

IN BOTH TOP HUNG AND BOTTOM SUPPORTED TYPES BY THE

CHICAGO RAILWAY EQUIPMENT COMPANY

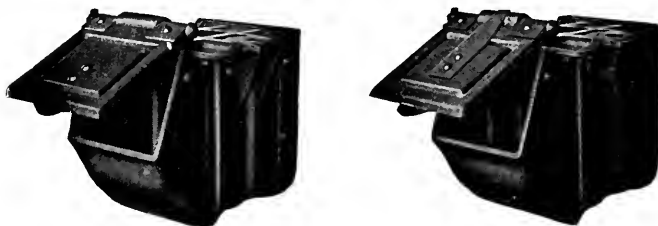
CHICAGO, ILLINOIS

Union Spring & Manufacturing Co.

RAILROAD SPRINGS

Kensington All Steel Journal Boxes

STEEL CASTINGS



Lightest and Strongest M. C. B.
Journal Boxes Made

WORKS:
NEW KENSINGTON, PA.

PITTSBURGH OFFICE
2001 CLARK BUILDING

NEW YORK	-	-	-	50 Church Street
CHICAGO	-	-	-	Fisher Building
RICHMOND, VA.	-	-	-	Mutual Building
LOUISVILLE, KY.	-	-	-	Equitable Life & Cas. Bldg.
BALTIMORE, MD.	-	-	-	Munsey Building
PHILADELPHIA, PA.	-	-	-	226 South 15th Street

OFFICIAL PROCEEDINGS OF The Railway Club of Pittsburgh

Organized October 18, 1901

Vol. XXIX
No. 7

Pittsburgh, Pa., May 21, 1930

\$1.00 Per Year
25c Per Copy

OFFICERS FOR 1929-1930

President E. W. SMITH,	
Vice President, The Pennsylvania Railroad, Pittsburgh, Pa.	
First Vice President PROF. LOUIS E. ENDSLEY, Consulting Engineer, Pittsburgh, Pa.	Secretary J. D. CONWAY, 1841 Oliver Building, Pittsburgh, Pa.
Second Vice President J. E. HUGHES, Superintendent, P. & L. E. R. R., Pittsburgh, Pa.	Treasurer E. J. SEARLES, Manager, Schaefer Equipment Company, Pittsburgh, Pa.

Executive Committee

FRANK J. LANAHAn, Pres., Fort Pitt Malleable Iron Co., P. O. Box 1054, Pgh., Pa.
A. STUCKI, Engineer, A. Stucki Company, 419 Oliver Bldg., Pittsburgh, Pa.
SAMUEL LYNN, Supt., Rolling Stock, P. & L. E. R. R., McKees Rocks, Pa.
D. F. CRAWFORD, Consulting Engineer, 5243 Ellsworth Avenue, Pittsburgh, Pa.
F. G. MINNICK, General Manager, P. & L. E. R. R., Pittsburgh, Pa.
G. W. WILDIN, Asst. Vice President, Westinghouse Air Brake Co., Wilmerding, Pa.
E. J. DEVANS, General Superintendent, B. R. & P. Ry. Co., Du Bois, Pa.
W. S. McABEE, Vice President, Union Railroad Co., East Pittsburgh, Pa.

Membership Committee

E. A. RAUSCHART, Mechanical Superintendent, Montour Railroad, Coraopolis, Pa.
OTIS R. HALE, Dis. Sales Mgr., American Loco. Co., Farmers Bank Bldg., Pgh., Pa.
T. E. CANNON, Gen. Supt., Locos. & Equipment, P. & W. Va. Ry., Pittsburgh, Pa.
GUY M. GRAY, Superintendent Motive Power, B. & L. E. R. R., Greenville, Pa.
C. E. PEIFFER, Master Car Builder, B. R. & P. Ry., Du Bois, Pa.
J. S. LANAHAn, Vice President, Fort Pitt Malleable Iron Co., Pittsburgh, Pa.
E. EMERY, Railway Supplies, 304 Oliver Building, Pittsburgh, Pa.
R. M. LONG, Air Brake Inspector & Instructor, P. & L. E. R. R., McKees Rocks, Pa.
DONALD O. MOORE, Mgr. of Traffic Division, Chamber of Commerce, Pittsburgh, Pa.
J. A. RALSTON, Mechanical Engineer, Union Railroad, Frick Bldg. Annex, Pgh., Pa.

Subject Committee

C. O. DAMBACH, Supt., P. & W. Va. Ry. Co., Wabash Bldg., Pittsburgh, Pa.
KARL BERG, Asst. Supt., Motive Power, P. & L. E. R. R., McKees Rocks, Pa.
S. G. DOWN, Vice President, Westinghouse Air Brake Company, Wilmerding, Pa.

Finance Committee

W. C. HANSEN, Sales Engineer, A. Stucki Co., 419 Oliver Bldg., Pittsburgh, Pa.
T. M. BLAKLEY, R. F. of E., Pennsylvania R. R., 101 Emerson Ave., Aspinwall, Pa.
J. H. CARROLL, JR., Freight Traffic Mgr., B. & O. R. R., 821 Oliver Bldg., Pgh., Pa.
W. P. CUNNINGHAM, Supt. Motive Power, Monongahela Ry., 3169 Ashlyn St., Pgh., Pa.
LLOYD SUTHERLAND, General Storekeeper, P. & L. E. R. R., McKees Rocks, Pa.

Entertainment Committee

CHARLES ORCHARD, Special Agent, Traffic Dept., Carnegie Steel Co., Pgh., Pa.
F. M. BROWN, Supt., P. & L. E. R. R., Pittsburgh, Pa.
ROBERT ROGERS, Sales Agent, American Car & Foundry Company, Pittsburgh, Pa.

Reception Committee

O. L. WRIGHT, District Manager, The Duff-Norton Mfg. Co., Pittsburgh, Pa.
CHARLES J. NIEMAN, Secretary & Treasurer, Penn Iron & Steel Co., Creighton, Pa.
GEORGE F. LAURENT, Sales Engineer, Fort Pitt Malleable Iron Co., Pgh., Pa.
A. B. WHYTE, Superintendent, B. R. & P. Ry. Co., Punxsutawney, Pa.
F. I. SNYDER, Vice President and General Mgr., B. & L. E. R. R., Pittsburgh, Pa.
COL. H. C. NUTT, Pres. & Gen. Mgr., Monongahela Railway Co., Pittsburgh, Pa.

Past Presidents

* J. H. McCONNELL	October, 1901, to October, 1903
* L. H. TURNER	November, 1903, to October, 1905
* F. H. STARK	November, 1905, to October, 1907
* H. W. WATTS	November, 1907, to April, 1908
* D. J. REDDING	November, 1908, to October, 1910
* F. R. McFEATHERS	November, 1910, to October, 1912
* A. G. MITCHELL	November, 1912, to October, 1914
* F. M. McNULTY	November, 1914, to October, 1916
* J. G. CODE	November, 1916, to October, 1917
* D. M. HOWE	November, 1917, to October, 1918
* J. A. SPIELMANN	November, 1918, to October, 1919
* H. H. MAXFIELD	November, 1919, to October, 1920
FRANK J. LANAHA	November, 1920, to October, 1921
SAMUEL LYNN	November, 1921, to October, 1922
D. F. CRAWFORD	November, 1922, to October, 1923
GEO. D. OGDEN	November, 1923, to October, 1924
A. STUCKI	November, 1924, to October, 1925
F. G. MINNICK	November, 1925, to October, 1926
G. W. WILDIN	November, 1926, to October, 1927
E. J. DEVANS	November, 1927, to October, 1928
W. S. McABEE	November, 1928, to October, 1929

PROCEEDING OF MEETING

MAY 21, 1930

The meeting was called to order at the Fort Pitt Hotel at 7:00 o'clock P. M., Eastern Standard Time, with Vice President Louis E. Endsley in the chair, in the absence of President E. W. Smith.

The following gentlemen registered:

MEMBERS

Adler, Abe C.	Falkner, A. J.
Altsman, W. H.	Farrell, G. R.
Baer, Harry L.	Fields, A. W.
Bain, C. A.	Fox, George W.
Beam, E. J.	Forsberg, R. P.
Beeson, H. L.	Frauenheim, A. M.
Berg, K.	Gaffney, Thomas H.
Blakley, T. M.	Geisler, Joseph J.
Bradley, W. C.	Glaser, J. P.
Campbell, J. E.	Glessner, G. P.
Campbell, J. T.	Gordon, George A.
Campbell, W. T.	Gorman, Charles
Cannon, T. E.	Hale, Charles E.
Canterbury, L. E.	Hamilton, H. M.
Carlson, L. E.	Hansen, William C.
Conway, J. D.	Harper, G. C.
Cotter, G. L.	Hastings, W. S.
Craig, John R.	Kavanagh, D.
Crawford, A. B.	Keefe, E. A.
Cunningham, R. I.	Kellenberger, K. E.
Cunningham, W. P.	Ketchpel, Paul A.
Dambach, C. O.	Kondej, H.
Davies, James	Kummer, Joseph H.
Davis, Charles S.	Lanahan, J. S.
Devans, E. J.	Laurent, Joseph A.
Doyle, Edward	Lehr, Harry W.
Edwards, C. H.	Lewis, Herbert
Emery, E.	Lobez, P. L.
En Dean, J. F.	Loeffler, George O.
Endsley, Prof. L. E.	Ludgate, B. A.
Emsheimer, Louis	Lynn, Samuel
Everstine, A. Perry	Meyers, William F.

Miller, J.	Sample, W. E.
Mills, C. C.	Schaffer, W. E.
Misner, George W.	Schultz, Charles H.
Mitchell, W. S.	Seiss, W. C.
Moody, M. R.	Seley, C. A.
Montgomery, J. L.	Shafer, John S.
Muir, R. Y.	Shellenbarger, H. M.
Myers, R. C.	Sheridan, T. F.
McAbee, W. S.	Showalter, Joseph
McBeth, P. C.	Smith, R. W.
McCrea, J. G.	Steen, W. E.
McIntyre, R. C.	Stephen, James
McMillen, A. P.	Stevens, L. V.
McNamee, W.	Stevens, R. R.
McPherson, A. R.	Stevenson, R.
Nagel, James	Stillwagon, C. K.
Nash, R. L.	Stucki, A.
Ness, H. S.	Tomasie, N. M., Jr.
O'Leary, J. J.	Uline, C. S.
Passino, F. J.	Van Blarcom, W. C.
Passmore, H. E.	Van Wormer, G. M.
Patterson, J. E.	Waldron, F. G.
Perkins, Charles F.	Warner, E. O.
Pickard, S. B.	Warner, Russell H.
Pringle, P. V.	Wheatley, William
Rauschart, E. A.	White, A. B.
Redding, R. D.	Winslow, S. H.
Redding, P. E.	Wittman, E. A.
Reeve, George	Woodward, R.
Rex, Charles C.	Wright, Edward W.
Rizzo, C. M.	Wright, O. L.
Rupp, Edwin S.	Wyke, J. W.
Sable, A. C.	Zammikiel, John

VISITORS

Bryan, T.	Dunham, C. W.
Buhl, William	Edwards, G. H.
Carlson, S. L.	Filch, J. L.
Cooper, W. E.	Ford, J. R.
Croslin, George	Forrester, J. B.
Davis, William B.	Gilg, E. H.
Dickinson, T. R.	Grove, L. T.

Gunderson, Lewis O.
Hamilton, R. M.
Hoover, R. A.
Ingram, William
Johnson, G. H.
Johnston, F. D.
Lais, G. James
Leech, B. E.
Leech, George R.
Lewis, George B.
Lewis, S. B.
Lindner, W. C.
Lucas, Dan A.
Marchand, L. E.
Meyers, William B.
Miller, J. V.
Miske, O. F.
Moore, David M.
Moore, J. V.

Murray, L. J.
Murphy, C. E.
McAndrews, R.
McConnell, L. J.
Nagel, James
Oschman, William
Payne, J. R.
Porter, H. L.
Robertson, M. R.
Schmyst, Paul
Sheeran, K. F.
Smith, Sion B.
Stein, J. A.
Tinsley, R. C.
Underwood, Walter C.
Warr, Fred E.
Weart, E. T.
Willoughby, Victor
Yetso, John J.

The call of the roll was dispensed with, the record of attendance being obtained through the registration cards.

The reading of the minutes of the last meeting was dispensed with, as they have appeared in printed form and been distributed to the members.

The Secretary read the following application for membership:

Schubert, C. F., Car Builder, Pressed Steel Car Company, 151 McCoy Road, McKees Rocks, Pa. Recommended by G. M. Van Wormer.

CHAIRMAN: This application will be referred to the Executive Committee, in accordance with our By-Laws, and upon approval by them the gentleman named will become a member without further action.

Is there any further business that should come before the Club at this time? If not, we will proceed to the paper of the evening. It gives me great pleasure to introduce to you Mr. J. V. Miller, Assistant General Storekeeper, Chicago, Milwaukee, St. Paul and Pacific Railroad, who will speak to us tonight on the subject, "Railroad Material Handling Costs."

REDUCING RAILROAD MATERIAL HANDLING COSTS

By J. V. MILLER,

Assistant General Storekeeper, C. M. St. P. & P. R. R., Milwaukee, Wis.

While preparing this paper, there came across my desk an advertisement from a large manufacturer, which contained the following quotation:

"Let me walk through a company's plant and I'll tell you if I want to buy their stock. Sound profits, today, are a matter of small percentages—saving tiny wastes—preventing little losses. I want to see if the management has planned to save a half of a per cent here, a quarter of a per cent there. If it has, I know that management is sound."

From my experience with material handling, it is my thought that the foregoing was perhaps inspired by watching material handling methods of various kinds in their plant, as this is just what happens. Many savings, of course, run into larger percentages, but it is the small savings that have escaped attention.

To correct an impression that some may have relative to material handling, I want to make clear that there is not at this time any one machine that will eliminate all of our troubles. I will mention several machines, however, which, if installed and given proper attention, will act as stepping stones to practically all of the desirable machines now available for railroad material handling problems.

We must never lose sight of the fact that large amounts of money have been expended in producing these machines and that they all have merit. At the first glance, we cannot always associate their use with our problems, and it may be that they will never fit our needs. Nevertheless, it will cost very little to give them due consideration, and it has been my experience that as we progress with our material handling problems, it is necessary to adopt many things that we could not previously connect with our installations or needs; and they have been life savers.

Material handling engineers, in their studies of industrial plants, have arrived at the conclusion that from fifty per cent to seventy-five per cent of all production costs are for handling materials. Knowing that this is true in industry, are we to presume that we are different and that this does not hold true

of our railroads? On the contrary, our material handling problems are perhaps more complicated than those of any known industry, as we have an ever changing problem, and practically every size and shape of material to handle. There is, therefore, conclusive proof that our material handling costs are equal to or more than those of the average industry. This being a fact, does it not reveal that perhaps this very serious condition has not been given the consideration it warrants?

In hunting, our efforts should be more productive in fields where game is plentiful. In our material handling, we have a field that in my estimation will produce more dollar-for-dollar returns on the investment than any we have at this time. It is not necessary to single out any item, as practically everything handled has its possibilities, and neither is it necessary to dwell at length on many types of material handling equipment, as they are so well known, seeing them every day, that it would be a waste of time. Therefore, there are some I will merely mention, devoting most of my time to those which are of the most interest at this time.

Cranes

Under the heading of "Cranes," are included all types and sizes. The larger types, however, are made necessary by physical limitation, and it is, therefore, not necessary to dwell on them.

During the past few years, there has come into use, many small types of cranes of from 2,000 pound to 8,000 pound capacity, and which are very flexible in their uses and movements. A study will show that the great majority of our lifts by cranes are under 1,000 pounds, and that we use a large number of men in this work. The nature and location of the work precludes the installation of large cranes, but now with these small cranes, tremendous savings can be made. Also, this is the kind of work that is most hazardous, and many minor, but painful, injuries can be avoided. A complete study of this type of crane and its uses will surprise one as to the number that can be advantageously used.

Before leaving the subject of "Cranes," let me add a word of caution. Cranes were designed to lift materials and not for hauling materials and running around, and the more they can be kept standing still and lifting, the greater will be the return on the investment.

Automobile Trucks

Seeing automobile trucks by the hundreds every day, we are familiar with their uses, and they should most certainly be adopted for many of our needs. There are so many uses for this equipment that it would be impossible to enumerate them. We are all prone to say that we have requested this equipment, but cannot convince our management, and let it go at that. It has been my experience that in failing to convince the management, the fault was not with those with the power to authorize, but with the applicant, who did not give the matter proper study, and failed in his presentation of facts. There are very few terminals at this time where auto trucks cannot be economically used. A good way to obtain some definite facts on this is to secure a truck and ship it from one point to another for service and thereby develop what can be done. We have had to install additional trucks at points where we at first were doubtful that the installation of a truck would be a paying proposition.

Tractors

For the past ten years or more, all railroads have invested heavily in tractors, and I have not heard of any that have not made returns far beyond their expectations. There was developed during this period, many attachments for tractors, such as hoists, lifting devices, brooms, plows, etc. All of these attachments have found ready use and have resulted in economies. But their uses must be constantly extended. It is not enough to purchase a tractor and then turn it loose to give hit-and-miss service. Its operations must be constantly studied, and insofar as possible, its work definitely programmed. There have been many tractor installations that could, with but little effort on some one's part, have doubled the return on the investment.

Lift Trucks

Lift trucks are perhaps the latest innovation in material handling on railroads. Contrary to general belief, the lift truck is not a new device, as it has been widely sold and used industrially for the past fifteen years. There are many roads that have had lift trucks in service for years, but it is only in the last two or three years that their real worth on railroads has been recognized. Due to their compactness and four-wheel steer, they can get in and out of tight places, and they have filled a long felt want in our material handling field. Due to the fact that their loading unit, a skid, is so low in price, once material

is placed in same, it can be kept there until used, eliminating many re-handlings. Also, it has been found economical to allow the skid to go in transit in box cars, with its complement of material, to destination and return with other material. This reduces the time of loading cars to a minimum and results in great economies. Its prime object is to eliminate the excessive picking up and laying down of materials, while it is a burden carrier also. Its field should be confined to as short a radius as possible.

There are two types of lift trucks, the hand and the power, ranging in capacity from 1 ton to 20 tons. There are designs to fit almost any need.

It may be your thought that lift trucks will eliminate other equipment, such as trucks and tractors, but such is not the case. In fact, they will make more of this equipment necessary, as they tend to build up loads formerly handled by push trucks and many men, into heavy units beyond man's capacity.

The lift truck has done more to open our eyes to the wonderful possibilities in material handling than any machine we have adopted to date, and we have but scratched the surface of its possibilities. Skids are easily made to conform to any class of material which can be handled.

Those of you who are not familiar with the lift truck, will find your time well spent if you will make a thorough investigation.

In addition to the machines I have mentioned, there are many other very desirable machines, and it is not the intention to slight any of them, but we must recognize the fact that there must be a starting point, as it would perhaps result in complete failure to endeavor to install all machines at one time.

Now, how are we going to start? There are perhaps but few places of any importance that do not at this time have some machines, so it will be necessary to ascertain definitely what they are doing. After this has been developed, it should be known what each machine can and should do. This can best be accomplished by unified control of all equipment. This places the problems in one basket, and allows the solving of same to take an orderly course. As each machine is brought up to its maximum efficiency in the assignments given, additional equipment should be added as quickly as possible to avoid complications. In order to do this, it will be necessary for those in charge to constantly look ahead, so they will at

all times know approximately when to have the additional machines ready for installation.

Another very important feature to efficient material handling, and one that has been constantly overlooked by most of us, is spare machines. The equipment used is subject to such hard usage that minor repairs are necessary frequently, and if neglected, the whole operation is seriously impaired. It may seem expensive to have spare equipment, but it is not as expensive as the delays caused by not having it.

After we have obtained all the equipment necessary, we should, no doubt, be showing a substantial return on the investment, and will, but what is needed is the maximum return, and this can only be accomplished in one way and that is by the co-operation of all departments being served. Here again you will find ready response, if your very best efforts are put forth to get it.

It must be distinctly understood that the purchase of all the equipment known for material handling will not save a dollar, unless it is properly supervised and constantly studied, as well as properly maintained.

In closing, let me say this to you. Do not look for the things that this equipment will not do, but find the things it will do and cross your bridges as you come to them. Do as the Prince of Wales advocated in a recent speech to English manufacturers, ADOPT, ADAPT, and IMPROVE.

CHAIRMAN: I am sure we have all been very much interested in Mr. Miller's address. I am not surprised at the cost of handling material that he states. I remember reading an abstract of some learned professor's discussion of the subject of how much money out of the selling price of a certain article went to labor. This was made in 1912, and 77.7 per cent of the cost of a pair of shoes, which was the article under discussion, went to labor so that if 50 per cent of the cost of handling materials goes to labor it is not up to the 77.7 per cent.

I am sure there are some questions you would like to ask, and it may be that some of you wish to add to the discussion. We will be glad to give you an opportunity at this time.

MR. D. KAVANAGH: I understood Mr. Miller to mention installing an industrial railroad at the Milwaukee shops, and he also spoke of concrete roads. Assuming that they are

using both, I would like to ask Mr. Miller which he considers most serviceable and most economical in the handling of materials, the industrial track railroad or the concrete road that goes down through their shops and yards.

MR. MILLER: I might answer that by saying that if the operation is confined to a track no doubt it would be more economical to use the regular dolly track system. However we find the concrete roads better for our operation. We have torn up practically all our dolly track, and we are able to go to any part of our plant or any of our buildings, which we could not do with our dolly track.

MR. WILLIAM BUIHL: I do not know whether I am entitled to make any remarks or not.

CHAIRMAN: Certainly. We will be glad to hear from you.

MR. BUIHL: First, I want to take this opportunity, before saying anything on the subject, to thank Mr. Miller and his organization for the opportunity I had of seeing this transportation system at their shops at Milwaukee about three weeks ago. I have been connected with material handling problems, not in connection with railroad material handling but in various fields, for about twelve years, and I want to say that the system I saw at the Milwaukee shops, of Mr. Miller's Company is certainly a remarkable installation. It is well laid out, well planned, and a well designed system.

Interesting to me was the fact that Mr. Miller was both loading and transporting his trailers with the same tractor. In other words he has a lifting and a transporting machine combined. I believe it would be worth while for many of you gentlemen to see that system.

MR. MILLER: The device this gentleman has spoken about is a lifting device that was designed by my assistant and myself, but it is as yet rather imperfect. Neither one of us is a mechanical engineer and we have had some difficulties to overcome. It has more than paid for itself. There is only one firm in the United States making it today and I do not know how far they have gone with it. But it has been adopted by a number of railroads. A high-low lift truck will accomplish the same result.

CHAIRMAN: Mr. Lynn.

MR. SAMUEL LYNN: Mr. Chairman, I was hoping you would not call on me to say anything tonight. As the subject of the evening is a railroad stores problem, in my opinion, the discussion is a matter which the Storekeepers of the different railroads would want to get into.

However, I agree with what Mr. Miller has said with regard to the handling of railroad materials, particularly with his statement that it was the storekeepers' job to get the material and see that it was moved economically to the point where it is needed. However, it is also the duty of representatives of the Mechanical and Car Departments to see that the material which they require is located at the point where it is needed and that the cost of handling the material is kept down, as we know that regardless of whether the material is handled by the Stores Department or by the department which requires it, the department which requires and uses the material is charged with the cost of handling, and for that reason it behooves the representatives of all departments to study their material handling costs. Mr. Miller made one statement in which I was particularly interested, and that was that in order to deliver the material economically it is necessary to have good roads. The matter of roads for trucking, or handling the material can be taken care of very nicely where you are building a new shop or plant, however, at a number of shops where considerable material is used they have nothing but dirt roads over which to operate trucks or tractors in handling material. I recall an occasion a few years ago, when we made an effort to reduce our material handling costs, we secured an electric truck with trailers for handling material, and I, naturally, was quite interested in following up the matter to see just what savings could be effected. This truck with trailers was put into operation, and on the first day we operated it we had some wheels to move from the Car Shop to the Machine Shop. We were timing the operation to see what one man with the truck could do as against the hand operation which we had formerly employed. The truck started from our Car Shop on the trip to the Machine Shop and it had gone only a short distance when it went up to the axle in mud, and we had to get men to take the wheels off the truck and deliver them to the Machine Shop. This forcibly brought to our minds the need of roadways before we could operate the truck successfully, and while Mr. Miller stated that the thing

to do is to sell the roadway problem to your executives, it might be that Mr. Miller is a better salesman than the rest of us, I am sure there are men here who will agree with me that it is not an easy matter to get the things we need around the shops just when we need them.

However, we are now handling quite a lot of our material by truck around the shops, and have just recently installed Ford tractors with trailers to handle material in order to reduce our material handling costs.

The material question, as I see it, is like other operations: It requires a thorough study and comparison with other costs, taking into consideration the layout of the shops and the cost of the improvements necessary to effect the economies desired by improved facilities for handling material.

I am thoroughly in accord with what Mr. Miller has said, and agree with him in that where it is possible the material should be handled by machinery.

MR. MILLER: When we started our operation we did not have a foot of concrete and we started with an electric truck. About every thirty minutes the whistle blew for men to come and lift the truck out of a hole in the floor of the platform where we were working it. The salesmen selling these trucks almost begged me not to put them in. They said they would not do anything. But we put them in and operated them as best we could and the result is that our management found out that concrete was necessary and today we can go into any part of the property on concrete.

CHAIRMAN: Mr. Berg, have you anything to say?

MR. K. BERG: I came in rather late, and am not sure whether or not Mr. Miller explained his method of handling and loading wheels. If not, I would like to hear from him on that. I would also like to know if Mr. Miller has figures available regarding the cost of material in connection with classified repairs on locomotives, and whether or not the savings that Mr. Miller has quoted on different material handling operations can be proved to reflect themselves in the cost of locomotive repairs, or if they are simply savings compiled in regard to those various items in handling. In other words, as Mr. Lynn stated, the cost finally will reflect itself in your cost of locomotive repairs or car repairs, as the case may be. I would like to know

whether or not any of those savings can be proved to reflect themselves in the final cost, also what proportion the cost of material and handling is to the total cost.

MR. MILLER: Do you mean mounted wheels, in your first question?

MR. BERG: Repair wheels to and from the place of repairs.

MR. MILLER: Our wheels are handled and placed on the car with steam or gasoline cranes. They lift only three pairs at a time.

Relative to the second question as to whether the cost is reflected finally in locomotive repairs, I do not feel that in my position I should answer that question. But I am sure that if you will write to our Superintendent of Motive Power or our Master Carbuilder, men who are vitally interested in this, they will tell you they are reflected in those costs.

CHAIRMAN: Mr. R. McAndrew, of the Bessemer & Lake Erie.

MR. R. McANDREW: I would like to ask about the electric crane truck with magnet, do you use that?

MR. MILLER: Yes, one of them is equipped with an 18" magnet. This one uses electricity from a gas-electric unit instead of batteries. It will handle a 100 lb. frog satisfactorily. It will not handle anything larger than that. There are some in operation that will handle larger than that but they exhaust the battery so fast they have not proven very satisfactory.

MR. McANDREW: We have had on our road for years, three using a battery and they have been very successful. The truck will pull itself and carry a load up to 1400 lbs. It is found to work out very well.

MR. MILLER: We use a gas-electric unit. We have never tried it with a battery. But you have brought out a point that is of great interest to me, the statement that you pick up a 1400-pound load and carry it on a boom. I have a great deal of trouble with my men on that score. If you are going to carry a load, as a matter of safety as well as the life of the machine, by all means drop the load on the platform and make the move and pick it up again. If you are carrying a

load of 1400 lbs. every time you hit a bump in the floor you are striking that machine a blow of 1400 pounds.

MR. McANDREW: That is true enough, but for a short haul and a smooth platform we do not experience any trouble.

MR. MILLER: It is very dangerous. From a safety standpoint I object very strenuously to any of our men carrying anything on the end of a boom.

MR. W. C. VAN BLARCOM: I have been very much interested in Mr. Miller's talk about the mechanical handling of materials. About 10 years ago I had some interesting experience along this line while connected with the Stores Department of one of the large anthracite mining companies. We started to use motor trucks to supplement the railroad deliveries from the General Storehouse to the 16 outlying colliery storehouses within a radius of 20 miles. Our Company was owned by one of the large railroads, and had been in the habit of delivering all material in freight cars, but it was soon evident that many small shipments of miscellaneous articles could be handled much cheaper by motor truck; the packing was far cheaper than for making delivery by package freight, and shipments could be made far more promptly than by waiting to make up a carload lot. Of course, bulky and heavy commodities and also large shipments were made via rail, as before.

Mr. Lynn mentioned getting stuck in the mud, which recalls an amusing incident that occurred at this General Storehouse which was a series of rambling structures built along the railroad right-of-way covering two city blocks. At first we had trouble with our trucks on account of the mud, but upon endeavoring to remove the mud in order to build a better roadway we found quite a stretch of good stone pavement which had been built some years before, but which had been covered over and forgotten.

It is interesting to watch the increasing interest being taken in storekeeping as an engineering problem; it was once considered almost purely a matter of bookkeeping to properly account for the receipt and delivery and charging out at the proper prices. I believe it is now being recognized that storekeeping is even more a matter of systematic ordering and economical handling of the material. I fully appreciate the necessity for adequate bookkeeping in order to safeguard the money invested in material, but I believe it is now quite widely accepted that

stock control records are of equal importance and that large economies can be secured by an adequate stock control and by economical physical handling of the material.

Previous to the storekeeping connection just mentioned, I had the good fortune to spend four years in the rubber industry, doing industrial engineering work largely in connection with the handling and warehousing of materials. On my first trip through a rubber factory I was amazed to find the extent to which skids, lift trucks, trailers and tractors were used. I do not know how it is today, but at that time one of these immense plants had an elaborate system of subways and even traffic cops at intersections to handle the heavy movement of these tractors and trailers between the various buildings and departments. It was also interesting to observe the ingenuity that had been used to develop skids for many special purposes, both to handle special material and also to handle it with the least amount of effort in loading and unloading.

At one time while on a visit to New York City I observed with considerable interest a special storage battery tractor with an individual motor driving each of the four wheels, this development came about due to the steep wet gang planks at the docks and appeared to be working out very satisfactory.

I remember that when the Scranton Locomotive Shops of the Lackawanna Railroad were rebuilt some 20 years ago they installed a system of subways between the Storehouse and the various shop buildings; these subways contained narrow gauge tracks over which were operated small electric locomotives similar to the mine motors. At that time this was supposed to be the last word in handling materials of this nature. Mr. Miller's splendid talk shows the great progress that has been made since then.

I would like to ask Mr. Miller if the storage battery tractor is the one which is now generally used, or if the gasoline type has largely replaced it? I would also be interested in knowing if he has made much use of tiering machines and light monorail devices?

MR. MILLER: We find all makes of machines using battery and gasoline. In certain places the electric is cheaper; in other places gasoline is cheaper. The railroad shops I have visited use mostly gasoline tractors—there are several makes on the market. There are not so many electric machines around the shops, except on the inside. Unfortunately we are living

in a gasoline age and a great many people have not made a study of the electric truck as some of us have, and are not familiar with how far they will run or what they will need. It is a very interesting study to put in the right equipment.

CHAIRMAN: Has anybody else anything to say?

MR. A. STUCKI: I have not very much to say. But in my travels I often made the statement that the railroads of this country have come back very nicely in the last ten years. They are making some money now and they are getting their equipment and road beds in good shape again. Then they asked me how it was possible. I told them by simply putting the shoulders to the wheel and looking ahead, by introducing labor saving machinery and watching expenses.

I also explained that most of our roads are very progressive and liberal in spending money for trying out new ideas and new details and wherever they can improve the service or decrease costs, they certainly adopt these new ways and that is why they get along.

I am happy to be here tonight to hear Mr. Miller give us one splendid example of this general tendency and I am sure you all feel that the Club should express its appreciation of Mr. Miller's excellent paper delivered in such a splendid way.

CHAIRMAN: We have been entertained, both at the opening and closing of this meeting, most delightfully by the Buffalo, Rochester and Pittsburgh Railway Quartette. I need not tell you how much we have enjoyed it, and how much we appreciate your presence here. And I take this opportunity, on behalf of the Club, to tender to you, and to your superior officer, Mr. Devans, a past President of this Club, our sincere thanks for your courtesy.

If there is nothing further, a motion to adjourn will be in order.

ON MOTION. Adjourned.

J. D. CONWAY, Secretary.

R E S E R V E D

CAR LIGHTING

COMPLETE EQUIPMENT

ELECTRIC OR GAS



The Safety Car Heating and Lighting Co.
 New York Chicago St. Louis Boston Philadelphia San Francisco Montreal

RAILWAY STEEL-SPRING CO.

Springs, Steel-Tired Wheels,
 Locomotive and Car Wheel Tires.
 Pressed Steel Journal Box Lids.

GENERAL OFFICE, 30 CHURCH STREET, NEW YORK
 BRANCH OFFICES—Chicago, St. Louis, St. Paul, Richmond, Denver,
 San Francisco, Dallas, Montreal, Que., Pittsburgh, Detroit, Cleveland

USED (Service-tested) A. R. A. FREIGHT CAR PARTS

Answering the four questions of chief importance:

QUALITY__Safe as Unused Parts if not actually Safer
QUANTITY_____Substantial Volumes
CONDITION_No more trouble using than Unused Parts
SAVING_____Very Satisfying

Are you receiving our Stock Lists? Write for them and our
 interesting proposition.

BRIGGS & TURIVAS, Inc.

Cars (Retired and Second-Hand) and CAR PARTS
 of All Kinds

Pittsburgh District Address: Imperial, Pa.

Phone: Imperial 132

General Office: Blue Island (Chicago) Illinois.
 Plants: Blue Island, Ill. Chicago Heights, Ill. Pittsburgh, Pa.

Roller Bearings Bring Maintenance Relief

No attention to oil, waste, brasses or condition of journals, yet dependable bearing service from shopping to shopping.

This is the contribution of the American Steel Foundries Roller Bearing Unit to the peace of mind of the maintenance man.

The Bearing is mounted within the wheel hub and the Unit is handled just as an ordinary wheel and axle assembly. No special adjustments! No complications!

AMERICAN STEEL FOUNDRIES

New York

CHICAGO

St. Louis

YOUNGSTOWN

ALL STEEL CORRUGATED FREIGHT CAR DOORS

CAMEL

FREIGHT CAR DOOR FIXTURES

Weather and Burglar Proof

Top or Bottom Supported

CAMEL SALES COMPANY

332 South Michigan Avenue

CHICAGO, ILLINOIS

Pressed Steel Car Co.

MANUFACTURERS OF

FREIGHT and PASSENGER

-:- CARS -:-

CASTINGS

FORGINGS

BOLSTERS

BRAKEBEAMS

TRUCKS

UNDERFRAMES

GREY IRON WHEELS

COMPLETE FACILITIES FOR REPAIRING CARS

OFFICES

New York

Pittsburgh

Chicago

St. Paul

Standard Steel Car Co.

OFFICES

General Offices: Frick Bldg., PITTSBURGH, PA.
NEW YORK, 170 Broadway
CHICAGO: Fisher Building

WORKS

Butler, Pa.
New Castle, Pa.
Hammond, Ind.

STEEL AND COMPOSITE

FREIGHT CARS

For all Classes of Service, from our Standard Designs,
or according to Specifications of Purchasers.

Steel Car Underframes

TRUCKS, BOLSTERS, BRAKE BEAMS, ETC.

Capacity 50,000 Cars per Annum INQUIRIES
SOLICITED

Union Steel Casting Company

Pittsburgh, Pa.

Cast Steel Locomotive Frames, Driving Wheel
Centers, Locomotive Steel Cylinders and
Miscellaneous Steel Castings

Vanadium, Nickel and other Alloy Steel Castings a
Specialty

CAR HEATING SPECIALTIES

Use "VAPOR"

{ Metallic Two-inch Steam Con-
nections between all Cars.
Automatic Temperature Control
Vapor System on all Cars.

VAPOR CAR HEATING CO., Inc.

Railway Exchange - Chicago, Ill.

GENERAL REFRACTORIES COMPANY

Home Office
PHILADELPHIA, PA.

Manufacturers of High Grade Fire Brick
For All Railroad Purposes

Locomotive Arch Brick
Direct from Manufacturer to Consumer

Consignment Stocks, Prompt Deliveries
Quality and Service Assured

RAILWAY SALES DEPARTMENT

Graybar Building—420 Lexington Avenue
New York City



H. & K.
Double Rotating Chair
No. 900

CHAIR CAR COMFORT IN DAY COACHES

These Luxurious Chairs

—bring to a focus the steady improvement made in Hale & Kilburn car seats during the last half century. The tendency in this development has been constantly towards greater comfort, larger and more commodious seats, softer springs and greater beauty.

Hale & Kilburn Co.

General Offices and Works:
1800 Lehigh Ave., Philadelphia

NATHAN

MECHANICAL LUBRICATORS

WATER COLUMNS INJECTORS LUBRICATORS

LOW WATER ALARMS

Locomotive and Stationary Boiler Fittings

NATHAN MANUFACTURING CO., 250 Park Avenue, New York

*Pacific Electric Railway
Main Street Terminal
Los Angeles*



Performance!



CONSIDER the locomotive in the broad light of a means of producing transportation.

Viewed in this light, the value of a locomotive to the railroad is measured by its ability to produce maximum gross-ton-miles-per-hour economically.

Stoker fired locomotives haul more tons and at higher speeds because they increase the sustained steam capacity of the locomotive.

The added locomotive earning power resulting from stoker firing justifies stoker application to any locomotives, large or small.

THE STANDARD STOKER COMPANY, Inc.

New York

Erie

Pittsburgh

VULCAN

CRUCIBLE STEEL COMPANY

Established in 1900

ALQUIPPA, PA.

*Makers of the better grades of Tool Steel, and the
pioneers in the manufacture of high quality
Vanadium Steels.*

KING

METALLIC

for Locomotive Piston
Rods, Valve Stems and
Air Pumps.



PACKINGS

King Sander
Security Latch
King Indestructible Oil Cups
King Hand Boring Lathe
Gollmar Bell Ringer
Leach Sanders

Reg. U. S. Pat. Off.

THE U. S. METALLIC PACKING CO.

PHILADELPHIA, PA.

POUNDS PRESSURE

THE safety cock of a Hudson Type 5200 is set to blow at 225. Her boiler test is 25% higher.

Would you put 3000 pounds pressure in that boiler? If you did, you couldn't use that locomotive again.

A Grip Unit Nut, of a certain size, withstands vibration, intermittent torque—every service strain to which it's subjected—with 500 inch pounds lock.

Would you put 3000 inch pounds of lock into that nut? You *could*, easily; but it would be hard to apply, wouldn't lock a bit better—and it would wreck the bolt, and the nut too, so that they couldn't be used again.

Twenty-three years of research, invention, experience, have developed, in Grip Nuts—not just a *lock*, but *just enough* lock. They apply; they lock; they hold; they don't junk the bolts, and the bolts don't junk them.

GRIP NUT COMPANY

5917 South Western Avenue

Chicago, Illinois

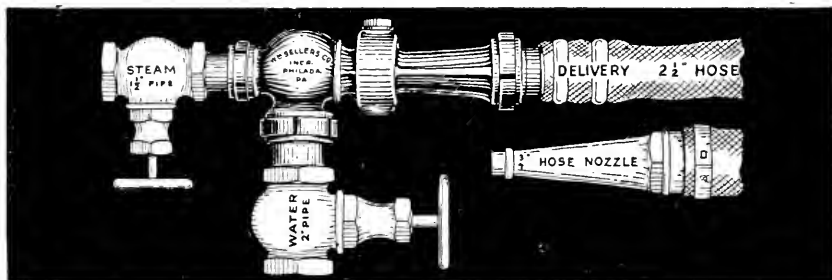
TUCO PRODUCTS CORPORATION

Tucolith Composition Flooring
Flexolith Composition Flooring
Royal Adjustable Car Window Screens
National Standard Steel Trap Doors
Universal Steel Trap Doors
Trap Door Locks and Holders
Tucos National Standard & Traction Roofing
Tucos Specially Treated Cab Curtain Material
Tucocendur Plates

30 Church Street,
New York

Tuco Long Wear Floor Dressing
Resisto Hairfelt Insulation
Tucos Rockwul-Jacket Insulation
Tucos Insulation for Car Floors
Tucos Floor Plate Preservative
Eclipse Deck Sash Ratchets
Steel Car Sheathing, Panels and Slats
Reliance Sash Balances
Perfection Sash Balances
Brown Window Sash Weatherstrips

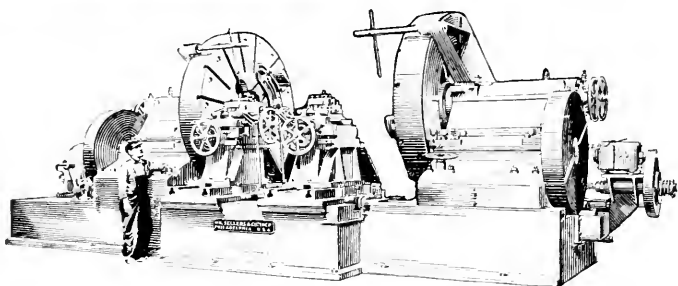
Railway Exchange Building,
Chicago



SELLERS Locomotive Boiler Washer, Filler and Fire Extinguisher

A simple, effective apparatus for Round House installation, designed to wash and fill locomotive boilers with hot water, or for preliminary fire service. Always ready for immediate use.

William Sellers & Co., Incorporated
Injector Dept. Philadelphia, U. S. A.



Railroad Shop Tools

Driving Wheel Lathes	Car Wheel Lathes
Axle Lathes	Driving Box Boring and Facing Mills
Car Wheel Boring Mills	Boring and Turning Mills
Tool Grinders	Drill Grinders

WM. SELLERS & CO., Incorporated
PHILADELPHIA, U. S. A.

BOILER COMPOUNDS

SOOT REMOVER



Buckeye Chemical Co.

Factory and Laboratory:

DETROIT, MICH.

Pittsburgh, Pa.
5621 Wellesley Ave.
Montrose 1362

Rochester, N. Y.
82 St. Paul St.
Main 3084

Over Thirty Years Serving the Engineer

Donated by A Friend

for welding and cutting



in the railroad shops of Pittsburgh district and thruout the country —
Airco Oxygen—Airco Acetylene—Airco-Davis-Bournonville Welding and Cutting Apparatus—Supplies.

AIR REDUCTION SALES CO.

Pittsburgh—1116 Ridge Avenue

New York—342 Madison Avenue

**OKONITE (RUBBER) and VARNISHED CAMBRIC
INSULATED WIRES and CABLES**

Manson Tape

THE OKONITE COMPANY

Okonite Tape

Founded 1878

THE OKONITE-CALLENDER CABLE COMPANY, Inc.

Factories: Passaic, N. J. - Paterson, N. J.

Sales Offices:

New York - Chicago - Pittsburgh - St. Louis - Atlanta
Birmingham - San Francisco - Los Angeles - Seattle - Dallas



SUPERHEATERS

DESIGNING ENGINEERS AND MANUFACTURERS
OF ELESKO STEAM SUPERHEATERS FOR
LOCOMOTIVE, MARINE AND STATIONARY
BOILERS



FEED WATER HEATERS, EXHAUST
STEAM INJECTORS AND PYROMETERS
FOR LOCOMOTIVES

17 East 42nd Street
NEW YORK

THE SUPERHEATER COMPANY

Peoples Gas Building
CHICAGO

OFFICIAL PROCEEDINGS RAILWAY CLUB OF PITTSBURGH

\$1.00 Per Year

25¢ Per Copy

Vol. XXIX

SEPTEMBER 25, 1930

No. 8

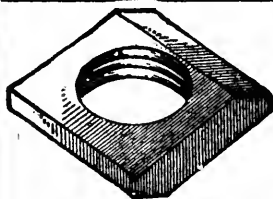
THE STORY OF STEEL

By JOHN A. OARTEL,

Chief of the Safety Bureau of the Carnegie Steel Company

Steel Car Forge Company PITTSBURGH, PENNSYLVANIA

FORGINGS



Dieter Lock and Holding Nuts

STANDARD SAFETY NUT CORPORATION

30 CHURCH ST.

NEW YORK

LOX-ON DEVICES CORPORATION

PAUL W. DIETER, President

30 CHURCH STREET

NEW YORK CITY

LEWIS IRON, "The Iron Superior"

Penn Iron & Steel Company, Creighton, Pa.

SOLE SALES AGENTS,

Joseph T. Ryerson & Son, Inc., Chicago, Ill.

OFFICIAL PROCEEDINGS
OF
The Railway Club of Pittsburgh

Organized October 18, 1901

Published monthly, except June, July and August, by The Railway Club of Pittsburgh, J. D. Conway, Secretary, 515 Grandview Ave., Pittsburgh, Pa.

Entered as Second Class Matter February 6, 1915, at the Postoffice at Pittsburgh, under the Act of March 3, 1879.

Vol. XXIX
No. 8.

Pittsburgh, Pa., Sept. 25, 1930

\$1.00 Per Year
25c Per Copy

Starrett



**The Standard
For Accuracy**



**Cut Quicker
Last Longer**



**Accurate
Reliable**

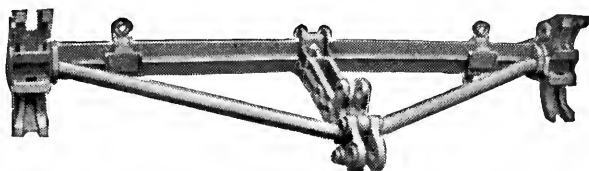
THE L. S. STARRETT CO., ATHOL, MASS., U. S. A.

BRAKE BEAMS

"Solid Truss"
and
Built-Up Types

AND

Brake Beam Supports



DAVIS "SOLID TRUSS" PASSENGER BEAM

ALSO

Pressed Steel Journal Box Lids

DAVIS BRAKE BEAM CO.

JOHNSTOWN, PA.

Sales Office: 418 Sixth Avenue, Pittsburgh, Pa.

GOULD

Side Frames Bolsters Couplers
 Passenger and Freight Journal Boxes
 Open Hearth Steel Castings

THE GOULD COUPLER CO.

NEW YORK

WORKS: DEPEW
 CLEVELAND

CHICAGO



CANDIES

Everybody likes Candy—with almost a thousand candies from which to make your selection, we can truthfully say that we have a variety to suit every taste—a box suitable for every occasion.

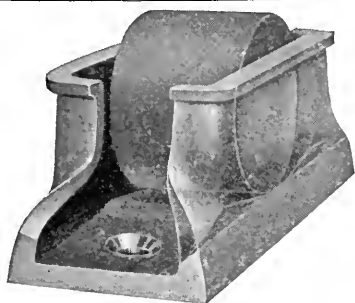
Lacquers
 Varnish
 Enamels
 Oil Colors



REG U S PAT OFF.

Railway and
 Industrial
 Protective
 Coatings

JAMES B. SIPE AND COMPANY
 PITTSBURGH, U. S. A.



STUCKI Side Bearings

A. STUCKI COMPANY
OLIVER BUILDING
PITTSBURGH, PA.

Canadian Representative
THE HOLDEN CO., LTD.
Montreal, Canada.

SOUTHERN WHEEL COMPANY

A. R. A. 850 LB.

SINGLE PLATE CHILLED TREAD WHEELS

FOR

70 TON CARS



*Our tests determine the best
shoe for each type of service.*

The American Brake Shoe and Foundry Company

230 Park Ave., New York

332 So. Mich. Ave., Chicago

**The Pocket List of
Railroad Officials**

*Used by the Officers of all Railroads on
The North American Continent*

Issued Quarterly

Subscription Price, \$6.00 per annum

Single Copies, \$2.50

Advertising rates on application

THE OFFICIAL RAILWAY EQUIPMENT REGISTER
ISSUED MONTHLY

Descriptive of freight and passenger cars of the Railways and
Private Car Companies in the United States, Canada and Mexico.
Subscription Price, \$15.00 per annum. Single Copies, \$2.00.

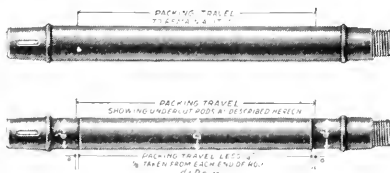
THE RAILWAY EQUIPMENT AND PUBLICATION CO.

J. ALEXANDER BROWN, Vice-President and Manager

424 West 33rd Street

New York

IF WE stated we could sell you the same steel you are now using for your piston rods at half the price you are paying, you would be greatly interested. Well, we can practically do that and make an additional saving of half the cost of labor required in preparing the rod for the engine by undercutting, as illustrated in cut below, instead of grinding or turning the wearing surface. That practice will extend the life of the rod fifty per cent or more. Paxton-Mitchell Metallic Packing will pack its own wear steam-tight until a rod has been reduced one-quarter of an inch. You will also save the cost of one set of packing, one sliding plate and one cone each time engine is in for general repairs.



Half sets of our packing segments may be reclaimed from scrap for use in making at least fifty per cent of renewals due to the four segment combination of our packing, which practically reduces the cost of making the renewals one-half.

"The Packing That Packs"

The Paxton-Mitchell Company
OMAHA, NEBRASKA

NATIONAL FRICTION DRAFT GEAR

The Perfect Shock Absorber

Requires No Re-Adjustment

NATIONAL MALLEABLE AND STEEL CASTINGS CO.

General Office — Cleveland, O.

In controlling scale formation, the Dearborn Treatment supplied not only stops new formations but also disintegrates scale already present, bringing it down gradually while the boilers remain in service.

DEARBORN CHEMICAL COMPANY

310 S. Michigan Avenue, Chicago 205 East 42nd Street, New York
Farmers Bank Bldg., Pittsburgh

Dearborn

TRADE MARK REGISTERED

SYMINGTON

Malleable Iron and Steel Journal Boxes
for Passenger and Freight Equipment

FARLOW DRAFT ATTACHMENTS

THE SYMINGTON COMPANY

New York Chicago Boston Baltimore Rochester Cleveland

BALL'S
Varnish Remover

OXOLIN
REGISTERED
THE IDEAL PAINT OIL

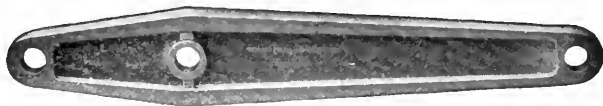
B. C.
Spirits

Ball Chemical Company

CHICAGO Office,
63 W. Van Buren Street.

Fulton Bldg., PITTSBURGH, PA.

Schaefer Drop-Forged Brake Levers



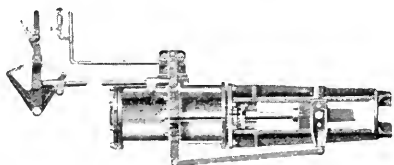
Designed to give uniform stress conditions throughout entire body of lever. Levers are drilled from templates and exact spacing between holes is thus assured.

Drop forging makes all levers uniform.

Lighter in weight with increased strength.

Schaefer Equipment Co.

General Offices: Koppers Bldg., Pittsburgh, Pa.



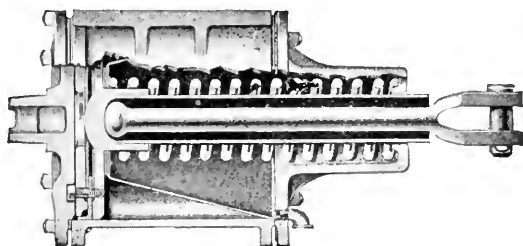
ALCO REVERSE GEAR

THE Alco Reverse Gear is designed to meet the demands of diversified service. It responds well not only to the needs of heavy freight service, but equally well to the needs of high speed passenger service. Again, in fast freight, helper and switching service it gives quick and accurate valve gear adjustments. In other words, it meets the conditions imposed on all classes of service—it does not excel in one at the expense of another.

American Locomotive Company

30 CHURCH STREET

NEW YORK CITY



This New Protector Keeps Cylinders Clean

A collapsible water-proof hood that prevents moisture and dirt from reaching the cylinder walls. Lengthens life of packing cups, reduces leakage, decreases maintenance cost. . . Ask for Circular Notice 1082.

Westinghouse Air Brake Co., Wilmerding, Pa.

From Lamps to Locomotives



The Westinghouse Electric and Mfg. Co. is prepared to take care of your *every* electrical need.

When thinking electrically,
think—

Westinghouse

Grant Building

Pittsburgh, Pa.

Locomotives For Fast Passenger Service

The records which are being made by Baldwin fast passenger locomotives on some of the most important railroads of the country, are very pleasing to us as the builders of such power.

With our complete organization and up-to-date equipment, we are prepared to design and build locomotives for any class of service.

THE BALDWIN LOCOMOTIVE WORKS
PHILADELPHIA

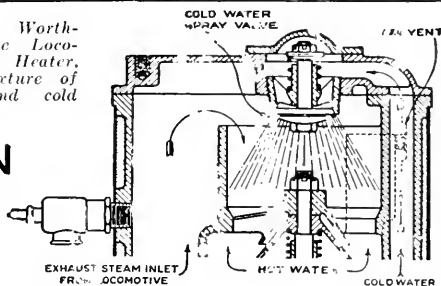
Spray valve of Worthington Open Type Locomotive Feedwater Heater, showing direct mixture of exhaust steam and cold water

WORTHINGTON



Open Type

Locomotive Feedwater Heating Equipment



gives these results:

1. Saves 12% of fuel
2. Saves 14% of water
3. Increases boiler capacity 10% to 13%
4. Increases drawbar pull at speed
5. Reduces stops for water and coal
6. Reduces boiler maintenance
7. Removes 80% to 90% of corrosive oxygen from feedwater
8. Purifies water
9. Reduces scale accumulation in boiler
10. Extends economic life of old engines by increasing steaming capacity and reducing fuel consumption

WORTHINGTON PUMP AND MACHINERY CORPORATION

Works: Harrison, N. J. Cincinnati, Ohio Buffalo, N. Y. Holyoke, Mass.

Executive Offices: 2 Park Avenue, New York, N. Y.

GENERAL OFFICES: HARRISON, N. J.

District Sales Offices or Representatives in 24 United States Cities

Branch Offices or Representatives in Principal Cities of all Foreign Countries

H-38

Factors that Increase Locomotive Effectiveness

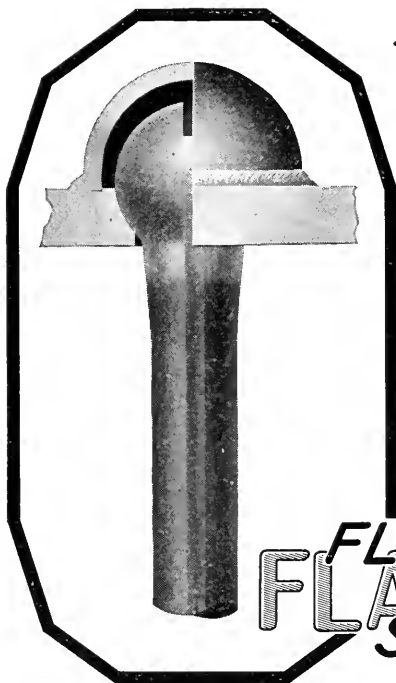


The Locomotive **BOOSTER**

Franklin Railway Supply Co., Inc.

17 East Forty-Second Street, New York

Chicago, Ill.	St. Louis, Mo.	San Francisco, Cal.
332 S. Michigan Ave.	Boatmen's Bank Bldg.	774 Monadnock Bldg.
Franklin Railway Supply Company, Limited, Montreal		
Export Department - International Railway Supply Co.		
30 Church Street, New York		

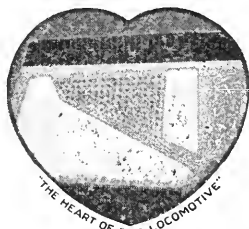


The Flannery Two-Piece
Assemblage is suitable
for every location and
angle in modern loco-
motive boilers.....

For your staybolt re-
quirements—flexible,
crown or rigid—write to

The Flannery Bolt Company
Flannery Bldg. Pittsburgh, Pa.

**FLEXIBLE
FLANNERY
STAYBOLTS**



Nicholson Thermic SYPHONS

pay constant dividends in
Fuel Saving—
Reduced Maintenance—
Increased Boiler Capacity—Safety
Your Best Investment

LOCOMOTIVE FIREBOX CO.,

Chicago

New York

Montreal

Hunt-Spiller Air Furnace Gun Iron

HAS THE
Strength and Wearing Qualities
THAT ARE ABSOLUTELY NECESSARY IN
LOCOMOTIVE CASTINGS

PRICES MODERATE

Manufactured Only By

RESULTS GREAT

Hunt-Spiller Manfg. Corporation

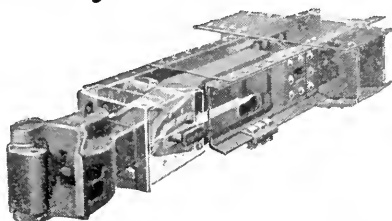
J. G. PLATT, President and General Manager

OFFICE AND WORKS:
383 DORCHESTER AVENUE
SO. BOSTON, MASS.

V. W. ELLET.
Vice President

The Buckeye Steel Castings Co.

COLUMBUS
NEW YORK
CHICAGO



ST. PAUL
LOUISVILLE
LONDON

“BUCKEYE” Yoke and Draft Attachments

FORT PITT SPRING COMPANY

PITTSBURGH, PA.

SPRINGS BOTH COIL
& ELLIPTIC

For Railroad Service

ALLOY SPRINGS A SPECIALTY

Malleable CASTINGS

OF UNIFORM QUALITY
ARE PERMANENT

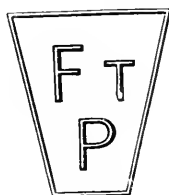
CURRENT AVERAGE TESTS

For 12 Months

910 Consecutive Heats

Tensile Strength, Yield Point Elong. %
Lbs. per sq. in. Lbs. per sq. in. in 2 in.

HIGH	61370	40420	28.1
LOW	56490	37210	22.6
AVERAGE	58344	38494	25.9



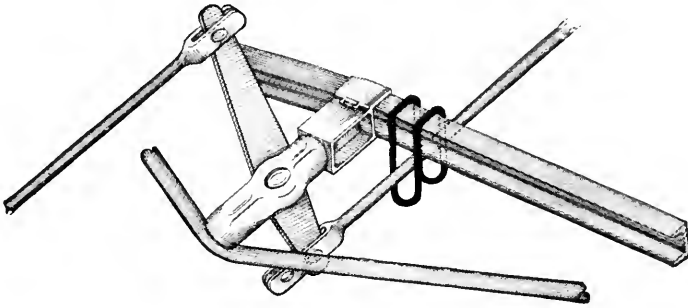
*This Trade-mark is your security on
Railroad Car Castings*

Send Blue Prints for Estimates

Fort Pitt Malleable Iron Company
PITTSBURGH, PA.

INDEX—ADVERTISERS.

NAME	Page	NAME	Page
Air Reduction Sales Co.....	xxiv	Penn Iron & Steel Co.....	Front Cover
American Brake Shoe & Foundry Co.....	lii	The Pocket List of Railroad Officials	lii
American Locomotive Co.....	vi	Pressed Steel Car Co.....	xviii
American Steel Foundries.....	xviii	Railway Equip't. and Publication Company	iii
Baldwin Locomotive Works....	viii	Railway Steel Spring Co.....	xvii
Ball Chemical Co.....	v	Reymer & Bros., Inc.....	ii
Buckeye Chemical Co.....	xxiv	Safety Car Heat. & Lighting Co....	xvii
The Buckeye Steel Casting Co.	xi	Schaefer Equipment Co.....	v
Camel Sales Co.....	xviii	Wm. Sellers & Co., Inc.....	xxiii
Chicago Railway Equip. Co.....	xiii	Sipe, James B., & Co.....	ii
Davis Brake Beam Co.....	i	Southern Wheel Co.....	iii
Dearborn Chemical Co.....	iv	Standard Safety Nut Corp. Front	Cover
Flannery Bolt Co.....	x	Standard Steel Car Co.....	xix
Fort Pitt Malleable Iron Co....	xi	The Standard Stoker Co.....	xxi
Fort Pitt Spring Co.....	xi	The L. S. Starrett Co.....	Inside Front Cover
Franklin Rwy. Supply Co., Inc.	ix	Steel Car Forge Co.....	Front Cover
General Refractories Co.....	xx	Stucki Co., A.....	iii
The Gould Coupler Co.....	ii	The Superheater Co.....	Front Cover
Grip Nut Co.....	xxii	The Symington Co.....	v
Hale & Kilburn Co.....	xx	Tuco Products Corp.....	xxii
Hunt-Spiller Mfg. Corporation	x	Union Spring & Mfg. Co.....	xiv
The Kerite Insulated Wire & Cable Co., Inc.....	xxi	Union Steel Casting Co.....	xix
Locomotive Firebox Co.....	x	U. S. Metallic Packing Co.....	xxii
Lox-On Devices Corp.....	Front Cover	Vapor Car Heating Co., Inc....	xix
Nathan Mfg. Co.....	xx	Vulcan Crucible Steel Co.....	xxii
National Malleable and Steel Castings Co.	iv	Westinghouse Air Brake Co....	vii
The Okonite-Callender Cable Company	Front Cover	Westinghouse Elec. & Mfg. Co.	vii
Paxton-Mitchell Co.....	iv	Worthington Pump and Machinery Corporation	ix



LOW COST PROTECTION

Afforded By the

CRECO BOTTOM ROD GUARD

Simply drive it on the brake beam.
It locks in place and cannot rattle.
Positively prevents fallen bottom rods.
Low in price and application cost.

Chicago Railway Equipment Co.

CHICAGO

Union Spring & Manufacturing Co.

RAILROAD SPRINGS

Kensington All Steel Journal Boxes

STEEL CASTINGS



Lightest and Strongest M. C. B.
Journal Boxes Made

WORKS:
NEW KENSINGTON, PA.

PITTSBURGH OFFICE
2001 CLARK BUILDING

NEW YORK	-	-	-	50 Church Street
CHICAGO	-	-	-	Fisher Building
RICHMOND, VA.	-	-	-	Mutual Building
LOUISVILLE, KY.	-	-	-	Equitable Life & Cas. Bldg.
BALTIMORE, MD.	-	-	-	Munsey Building
PHILADELPHIA, PA.	-	-	-	226 South 15th Street

OFFICIAL PROCEEDINGS OF The Railway Club of Pittsburgh

Organized October 18, 1901

Vol. XXIX
No. 8.

Pittsburgh, Pa., Sept. 25, 1930

\$1.00 Per Year
25c Per Copy

OFFICERS FOR 1929-1930

President E. W. SMITH,		Secretary J. D. CONWAY,
Vice President, The Pennsylvania Railroad, Pittsburgh, Pa.		1841 Oliver Building, Pittsburgh, Pa.
First Vice President PROF. LOUIS E. ENDSLEY,		Treasurer E. J. SEARLES,
Consulting Engineer, Pittsburgh, Pa.		Manager, Schaefer Equipment Company, Pittsburgh, Pa.
Second Vice President J. E. HUGHES,		
Superintendent, P. & L. E. R. R., Pittsburgh, Pa.		

Executive Committee

FRANK J. LANAHAN, Pres., Fort Pitt Malleable Iron Co., P. O. Box 1054, Pgh., Pa.
A. STUCKI, Engineer, A. Stucki Company, 419 Oliver Bldg., Pittsburgh, Pa.
SAMUEL LYNN, Supt., Rolling Stock, P. & L. E. R. R., McKees Rocks, Pa.
D. F. CRAWFORD, Consulting Engineer, 5243 Ellsworth Avenue, Pittsburgh, Pa.
F. G. MINNICK, General Manager, P. & L. E. R. R., Pittsburgh, Pa.
G. W. WILDIN, Dist. Mgr., Cordwell Westinghouse Co., Pittsburgh, Pa.
E. J. DEVANS, General Superintendent, B. R. & P. Ry. Co., Du Bois, Pa.
W. S. McABEE, Vice President, Union Railroad Co., East Pittsburgh, Pa.

Membership Committee

E. A. RAUSCHART, Mechanical Superintendent, Montour Railroad, Coraopolis, Pa.
T. E. CANNON, Gen. Supt., Locos. & Equipment, P. & W. Va. Ry., Pittsburgh, Pa.
GUY M. GRAY, Superintendent Motive Power, B. & L. E. R. R., Greenville, Pa.
C. E. PEIFFER, Master Car Builder, B. R. & P. Ry., Du Bois, Pa.
J. S. LANAHAN, Vice President, Fort Pitt Malleable Iron Co., Pittsburgh, Pa.
E. EMERY, Railway Supplies, 1401 Oliver Building, Pittsburgh, Pa.
R. M. LONG, Air Brake Inspector & Instructor, P. & L. E. R. R., McKees Rocks, Pa.
DONALD O. MOORE, Mgr. of Traffic Division, Chamber of Commerce, Pittsburgh, Pa.
J. A. RALSTON, Mechanical Engineer, Union Railroad, Frick Bldg. Annex, Pgh., Pa.

Subject Committee

C. O. DAMBACH, Supt., P. & W. Va. Ry. Co., Wabash Bldg., Pittsburgh, Pa.
KARL BERG, Asst. Supt., Motive Power, P. & L. E. R. R., McKees Rocks, Pa.
S. G. DOWN, Vice President, Westinghouse Air Brake Company, Wilmerding, Pa.

Finance Committee

W. C. HANSEN, Sales Engineer, A. Stucki Co., 419 Oliver Bldg., Pittsburgh, Pa.
J. H. CARROLL, JR., Freight Traffic Mgr., B. & O. R. R., 521 Oliver Bldg., Pgh., Pa.
W. P. CUNNINGHAM, Supt. Motive Power, Monongahela Ry., 3169 Ashlyn St., Pgh., Pa.
LLOYD SUTHERLAND, General Storekeeper, P. & L. E. R. R., McKees Rocks, Pa.

Entertainment Committee

CHARLES ORCHARD, Special Agent, Traffic Dept., Carnegie Steel Co., Pgh., Pa.
F. M. BROWN, Supt., P. & L. E. R. R., Pittsburgh, Pa.

Reception Committee

O. L. WRIGHT, District Manager, The Duff-Norton Mfg. Co., Pittsburgh, Pa.
CHARLES J. NIEMAN, Secretary & Treasurer, Penn Iron & Steel Co., Creighton, Pa.
GEORGE F. LAURENT, Sales Engineer, Fort Pitt Malleable Iron Co., Pgh., Pa.
A. B. WHITE, Superintendent, B. R. & P. Ry. Co., Punxsutawney, Pa.
F. I. SNYDER, Vice President and General Mgr., B. & L. E. R. R., Pittsburgh, Pa.
COL. H. C. NUTT, Pres. & Gen. Mgr., Monongahela Railway Co., Pittsburgh, Pa.

Past Presidents

*J. H. McCONNELL.....	October, 1901, to October, 1903
*L. H. TURNER.....	November, 1903, to October, 1905
F. H. STARK.....	November, 1905, to October, 1907
*H. W. WATTS.....	November, 1907, to April, 1908
*D. J. REDDING.....	November, 1908, to October, 1910
*F. R. McFEATHERS.....	November, 1910, to October, 1912
*A. G. MITCHELL.....	November, 1912, to October, 1914
*F. M. McNULTY.....	November, 1914, to October, 1916
J. G. CODE.....	November, 1916, to October, 1917
*D. M. HOWE.....	November, 1917, to October, 1918
*J. A. SPIELMANN.....	November, 1918, to October, 1919
H. H. MAXFIELD.....	November, 1919, to October, 1920
FRANK J. LANAHAN.....	November, 1920, to October, 1921
SAMUEL LYNN.....	November, 1921, to October, 1922
D. F. CRAWFORD.....	November, 1922, to October, 1923
GEO. D. OGDEN.....	November, 1923, to October, 1924
A. STUCKI.....	November, 1924, to October, 1925
F. G. MINNICK.....	November, 1925, to October, 1926
G. W. WILDIN.....	November, 1926, to October, 1927
E. J. DEVANS.....	November, 1927, to October, 1928
W. S. McABEE.....	November, 1928, to October, 1929

*—Deceased.

†—Resigned.

Meetings held fourth Thursday of each month except June, July and August.

PROCEEDINGS OF MEETING

SEPTEMBER 25, 1930

The meeting was called to order in the English Room of the Fort Pitt Hotel at 8 o'clock P. M., with President E. W. Smith in the chair.

The following gentlemen registered:

MEMBERS

Allen, Harvey	Endsley, Prof. Louis E.
Altsman, W. H.	Fisher, J. J.
Babcock, F. H.	Forsberg, R. P.
Bailey, Frank G.	Fox, George W.
Balzer, C. E.	Frauenheim, A. M.
Bell, D. H.	Fults, J. H.
Bowen, James T.	Geisler, Jos. J.
Boylan, P. F.	Gordon, George A.
Brinkhoff, W. H.	Gray, Guy M.
Buffington, W. P.	Hall, C. B.
Burel, W. C.	Haller, Nelson M.
Burgham, M. L.	Hancock, Milton L.
Campbell, Edward	Hansen, William C.
Campbell, Harry V.	Harper, G. C.
Cannon, T. E.	Harper, J. T.
Carson, John	Hilstrom, A. V.
Chittenden, A. D.	Holmes, E. H.
Christy, F. X.	Hood, C. E.
Cipro, Thomas	Hood, J. M.
Conway, J. D.	Hoover, J. W.
Coombe, A. B.	Hughes, J. E.
Coulter, A. F.	Irwin, Robert D.
Courtney, H.	Johnston, W. A.
Craig, John B.	Jones, William J.
Croke, Thomas F.	Kaup, Earle W.
Currie, John	Kerr, C. R.
Dalzell, W. E.	Ketchpel, Paul A.
Dambach, C. O.	Keys, A. H.
Dempsey, P. W.	Kinney, Thomas F.
Descamp, J.	Lanahan, Frank J.
Dickinson, F. W.	Lanahan, J. S.
Diven, J. B.	Laughner, C. L.
Doyle, Edward	Laurent, Joseph A.
Edgett, J. W.	Lawson, A. F.
Edwards, C. H.	Lehr, H. W.
Emery, C. W.	Linsenbigler, Allen J.
Emery, E.	Lowman, John R.
Emsheimer, Louis	Lowry, William F., Jr.
En Dean, J. F.	Lynch, B. J.

Lynn, Samuel
 Mason, S. O.
 Meinert, Henry
 Misklow, C. J.
 Misner, George W.
 Mitchell, Frank K.
 Mitchell, W. S.
 Morgan, A. L.
 Moir, W. P.
 Moore, Donald O.
 Moyer, Oscar G.
 Muir, R. Y.
 Myers, Arnold
 McAbee, W. S.
 McIntyre, R. C.
 McKinley, A. J.
 McNamce, W.
 McPherson, A. R.
 Nagel, James
 Noble, J. A.
 O'Sullivan, John J.
 Painter, Joseph
 Paisley, F. R.
 Posteraro, S. F.
 Pringle, P. V.
 Reeve, George
 Rizzo, C. M.
 Robinson, R. L.
 Rossell, R. T.
 Roth, Philip J.
 Saltic, Thomas
 Sattley, E. C.
 Schmitt, Raymond F.
 Seiss, W. C.
 Seroky, Edward A.

Severn, A. B.
 Sheets, H. E.
 Shellenbarger, H. M.
 Shelly, D. L.
 Sheridan, T. F.
 Simons, P.
 Smith, E. W.
 Smith, H. K.
 Smith, J. Frank
 Snyder, F. I.
 Spinning, Charles F.
 Stamets, William K.
 Stephen, James
 Stevens, R. R.
 Stillwagon, C. K.
 Stoecker, J. P.
 Stoffregen, Louis E.
 Stucki, A.
 Taiclet, J. A.
 Thomas, Theodore
 Tomasic, Joseph
 Tomasic, N. M., Jr.
 Tucker, John L.
 Tuttle, C. L.
 Vandivort, R. E.
 Vollmer, Karl L.
 Waldron, F. G.
 Walther, G. C.
 Warrensford, Fred S.
 Waterman, E. H.
 Whalen, D. J.
 Wheatley, William
 Winslow, S. H.
 Woodward, R.
 Zammikiel, John

VISITORS

Albert, J. S.
 Aldinger, W. F.
 Alexander, J. R.
 Allshouse, H. H.
 Ambill, H. Paul
 Beltz, H. A.
 Bentley, J. W.
 Berbach, Leo J.
 Biggard, W. J.
 Brandt, B. H.
 Braun, S. R.
 Brubach, Charles, Jr.
 Buck, S. M.

Buck, W. G.
 Champion, C. W.
 Chickering, T.
 Clancy, C. A.
 Collins, James
 Cunningham, H. S.
 Dana, H. L.
 Dana, T. W.
 Dario, Albert
 Dickinson, T. R.
 Donaghy, Harry
 Donaghy, Sloane
 Dunlap, S. Lewis

Dunlap, Willaim H.
Dunn, C. A.
Eason, G. S.
Ebbert, Harry G.
Elkin, W. C.
Elliott, John W.
Elliott, Thomas W., Jr.
Emery, Dick
Emery, Jack
Epperson, R. F.
Erickson, E.
Evans, John B.
Faas, H. C.
Flinn, R. M.
Flucker, M. J.
Fray, Samuel
Gardner, Thomas K.
Gascoine, John
Gewell, J. E.
Gollmar, H. C.
Hammer, J. W.
Hazlett, James
Heed, H. L.
Heineman, J. V.
Hemma, Charles H.
Henry, Frank P.
Herring, W. S., Jr.
Hiester, E. G.
Hingeley, E. M.
Hood, Edwin M.
Hunter, J. F.
Hynes, William B.
Irwin, A. J.
Jenny, Albert S.
Johnston, N. G.
Jones, Ralph E.
Kamerer, G. M.
Kauffman, Arthur C.
Kenah, W. B.
Kruse, V. S.
Kuehner, F. B.
Larsen, O. L.
Leach, W. A.
Lewis, S. B.
Lintner, A. R.
Lintner, G. E.
Lloyd, A. E.
Marsh, H. G.
Marsh, E. W.
MacDonald, H. C.
Martin, Edgar E., Jr.

Matthews, Ansel H.
Maxton, S.
Miller, W. H.
Mock, James C.
Moore, Joseph
Morgan, Homer C.
Mowery, Leroy
Murphy, M. E.
McCloy, F. D.
McFetridge, W. S.
McKinley, John T.
McLaughlin, Glenn C.
McLaughlin, J.
Neumann, Emil, Jr.
Oartel, John A.
O'Brien, Harry E.
Patmor, H. F.
Petrie, Harry F.
Pierpoint, A. E.
Pinkney, C. N.
Queer, Thomas H.
Robinson, William
Richards, John D.
Roehrig, George A.
Roehrig, John A.
Roth, W. B.
Rutter, M. Luther
Saxon, C. E.
Schadt, A. D.
Schwartz, William J.
Shields, Murray
Smith, C. W.
Smith, Harry W.
Smith, Sion B.
Snyder, H. C.
Sowards, Clyde C.
Stadnick, A. J.
Swanson, A. P.
Teeple, Berkley
Thomas, Elmer R., Jr.
Troxell, H. K.
Tydings, D. S.
Van Horn, I. L.
Veenstra, T. A.
Von Bernewitz, M. W.
Watkins, R. J.
Watson, T. Lane
Weaver, F. T.
Weaver, W. Frank
Webb, J. M.
West, W. O.

Westlund, E. O.
Wherry, M. W.
Whiteman, T. C.
Wilging, Albert G.

Winterton, Tom P., Jr.
Wood, Thomas P.
Yarnall, Jesse
Young, Herbert M.

The calling of the roll was dispensed with, the attendance being recorded on the registration cards.

The reading of the minutes of the last meeting was dispensed with, as the printed Proceedings have already been published and distributed to the members.

Before entering upon the business of the meeting a splendid musical program was presented by the Safety First Glee Club of the Bessemer & Lake Erie Railroad. The members of this Glee Club are from the motive power department, right out of the shops, and their presentation was especially pleasing.

The Secretary read the following list of applications for membership:

Bittner, George, Asst. Enginehouse Foreman, The Pennsylvania Railroad, 56 Maplewood Street, Etna, Pa. Recommended by F. X. Christy.

Cole, Raymond L., Asst. Foreman, Pullman Company, 2152 Walton Avenue, Overbrook, Pittsburgh, Pa. Recommended by Harry W. Lehr.

Crede, William A., Chief Train Clerk, Office of Supt. Pass. Trans., The Pennsylvania Railroad, 1024 Pennsylvania Station, Pittsburgh, Pa. Recommended by Harry W. Lehr.

Dudley, Jesse C., Asst. Road Foreman of Engines, The Pennsylvania Railroad, 603 Hill Avenue, Wilkinsburg, Pa. Recommended by Harry W. Lehr.

Fleck, John S., Chief Transportation Clerk Psgr., The Pennsylvania Railroad, 625 Kirtland Street, Pittsburgh, Pa. Recommended by Harry W. Lehr.

Harper, James W., Medical Examiner, The Pennsylvania Railroad, 228 Pennsylvania Station, Pittsburgh, Pa. Recommended by Harry W. Lehr.

Hays, Harry E., Asst. Road Foreman of Engines, The Pennsylvania Railroad, 520 North Fairmount Avenue, Pittsburgh, Pa. Recommended by Harry W. Lehr.

Heed, H. L., Agent, Twenty-sixth Street Terminal, Railway Ex-

- press Company, Twenty-sixth Street and Liberty Avenue, Pittsburgh, Pa. Recommended by Harry W. Lehr.
- Hiester, E. G., Asst. Dining Car Agent, The Pennsylvania Railroad, 3125 Perrysville Avenue, N. S., Pittsburgh, Pa. Recommended by Harry W. Lehr.
- Jenneas, D. H., Road Foreman of Engines, The Pennsylvania Railroad, 801 Heberton Avenue, Pittsburgh, Pa. Recommended by Harry W. Lehr.
- Leach, William A., Mechanical Draughtsman, Westinghouse Electric and Manufacturing Company, 332 Charles Street, Turtle Creek, Pa. Recommended by J. D. Conway.
- Leban, J. L., Second Asst. Dist. Supt., The Pullman Company, 1602 Broadway Avenue, South Hills Branch, Pittsburgh, Pa. Recommended by Harry W. Lehr.
- Manning, James F., Jr., Asst. Road Foreman of Engines, The Pennsylvania Railroad, 410 South Atlantic Avenue, E. E., Pittsburgh, Pa. Recommended by Harry W. Lehr.
- Miller, W. H., Dining Car Agent, The Pennsylvania Railroad, Fort Pitt Hotel, Pittsburgh, Pa. Recommended by Harry W. Lehr.
- Moss, J. M., Sales Manager, Pittsburgh Testing Laboratory, P. O. Box 1115, Pittsburgh, Pa. Recommended by B. H. Wither-
spoon.
- Myers, Bernard E., Asst. Passenger Train Master, The Pennsylvania Railroad, 7423 Penfield Place, Pittsburgh, Pa. Recommended by Harry W. Lehr.
- McKenzie, Edward F., Air Brake Instructor, The Pennsylvania Railroad, 7934 Susquehanna Street, Pittsburgh, Pa. Recommended by Harry W. Lehr.
- Sanders, H. D., Clerk, The Pennsylvania Railroad, 131 Teece Avenue, Bellevue, Pa. Recommended by Harry W. Lehr.
- Thomas, R. A., Agent, Railway Express Agency, B. & O. Terminal, Pittsburgh, Pa. Recommended by Harry W. Lehr.
- Van Horn, I. L., Sales Representative, Ferbert-Schorndorfer Company, 127 Central Square, Mt. Lebanon, Pittsburgh, Pa. Recommended by William F. Lowry, Jr.

PRESIDENT SMITH: These applications will be referred to the Executive Committee, in accordance with our By-Laws, and

upon approval by them the gentlemen will become members without further action.

SECRETARY CONWAY: Since our last meeting we have received information of the death of three of our members:

John P. Reardon died May 24, 1930; J. L. Rowe died June 5, 1930, and Thomas D. Evans died June 22, 1930.

PRESIDENT: An appropriate memorial minute will appear in the next issue of the Proceedings.

On the subject of new members, I would like to ask Mr. Frank J. Lanahan to say a few words, if he will.

MR. FRANK J. LANAHAN: Hearing the applications that were read tonight, I think the best person to pick would be that man, Mr. Lehr, whose name appeared so continuously as the "recommender". I wish he would stand, so we can see the sort of a fellow he is. Fine! The only reason the President called upon me, I suppose, is because I am Chairman of the Executive Committee. We might present to this assembly the attractions of this Club, the reasons why we are identified with it, and have such a great interest in it, the tremendous appeal it makes to us, or any number of other reasons.

It is not alone a Railway Club, it embodies dozens of other attributes. It is patriotic, social, civic, educational, and added to all this, it has something of a practical nature, in that every evening there is served a delightful lunch. The papers that have been presented to this Club during its history are of such a character that those who have listened to them have derived great benefit. In addition to the presentation of the paper here, the subject is edited in pamphlet form and sent to every member in the printed proceedings, so that one is afforded the opportunity at his leisure, to peruse the most advanced thought on many lines of activity, more particularly pertaining to the railroads.

One of the outstanding features of this organization is that it is a great leveler. Here are not alone the executive officers—those who are sometimes spoken of as the occupants of the swivel chairs—but the operating men, the engineers, as well as the rank and file. It embraces the chief executive down to the horny-handed son of toil. In this organization they meet shoulder to shoulder; they sit side by side, they discuss the same problems. It is to my way of thinking, the best exponent of democracy that could possibly be found. In the Railway Club of Pittsburgh you get an acquaintance that is well worth whatever inconvenience to

which anyone might be put in attending the gatherings. In all the years of my attendance at innumerable meetings, I have never seen anyone frown, I have never seen anyone angry. I have heard spirited debates, often on subjects of vital importance to individuals present, and they got up, put in their little word, present their arguments, and abide by the results. To me it is a wonderful organization, genial, happy, friendly. And when I tell you that all this is provided for the magnificent—or insignificant—sum of \$3.00 a year, you can see why we are proud of it. A cordial invitation is extended to any here tonight who are not members of the Club, to make application for membership. You will be most welcome, and I am sure you will not feel sorry for having joined the greatest club for democracy there has ever been in this country.

PRESIDENT: It is the duty of the President at this meeting to appoint a Committee on Nominations to present names of candidates for the various offices for the ensuing year. I will ask Mr. Emery to act as Chairman of that Committee, and Mr. F. R. Babcock and Mr. E. C. Sattley to act with him. And I will ask the Committee to report some time before the close of this meeting.

If there is no further business, I would like to introduce Mr. John A. Oartel, who is Chief of the Safety Bureau of the Carnegie Steel Company. Mr. Oartel will give us a presentation of *The Story of Steel*, which will be illustrated by moving pictures.

THE STORY OF STEEL

By JOHN A. OARTEL,

Chief of the Safety Bureau of the Carnegie Steel Company

MR. JOHN A. OARTEL: Mr. President and Gentlemen: After a few preliminary remarks I am going up closer to the screen, in case I may have to use a pointer to point out some particular thing in the picture. I want to say that we can stop the picture if there is any question about a particular thing, and explain it.

I want to thank you all for coming here tonight to hear me, because I know that is not why you are here, but rather to see these very interesting pictures. Why I am linked up with it I do not know except that I have spent all my life in a steel mill and perhaps I can talk about it a little intelligently. However I get a lot of fun going around talking, mostly on safety.

One little experience may interest you. A few years ago I was President of the Western Pennsylvania Safety Council, which is the local organization of the great National Safety Council, which is holding its Nineteenth Annual Convention in Pittsburgh next week. By the way you are going to get a lot of safety next week. Pittsburgh is going to get a lot of safety, and Western Pennsylvania. I hope that some time during this meeting Mr. Frank Lanahan will tell you something about that meeting. I think he is more enthusiastic about this convention and has worked harder to make it a success than any man in Pittsburgh.

A few years ago I was President of the Western Pennsylvania Safety Council. One of the things that Council does is to put on a series of lecture courses for foremen in Western Pennsylvania and surrounding territory, reaching as far as Uniontown and New Kensington and Washington, Pa. Those lectures are concluded with a banquet. One of my duties as President was to go to all these banquets. Pretty soft, you say, to go around and eat a lot of good things. The food was not so bad, but in going to these banquets I began to get concerned about myself. I do not know how long it is since you left high school or college but it is a good long time since I left the grammar school. There is a word used now that was not in the dictionary then; it is the word complex. We say people acquire complexes. And complexes, as you know, are of two kinds. There is a superiority complex, which means that you are better than the other fellow, and there is the inferiority complex, which means that you are not quite so good. Well, I found myself acquiring a double barreled complex, which I imagine is a unique experience. It was like this. In one week I attended three of these banquets. They were all held in churches and they all had ham to eat at each one. The superiority phase of the complex arose from attending church three times in one week, and the inferiority one came from eating ham three times in a week. I got home and the good wife said, "How would you like to have ham for dinner?" Of course I am not boss in my home, neither is any other man, no matter how strenuously he may testify to the contrary. I said, "All right, go ahead, I can stand it once more this week."

Shortly after that I went to a little mining town in Western Pennsylvania where the Frick Coke Company was graduating a class of young ladies that had been training in domestic science. The meeting was held in the school house, where I faced a fine group of young ladies, all arrayed in white. I tell you they were

good to look at. I wanted to tell them a story and I thought this was the best one I had at the time, so I told it. When I had finished it the welfare nurse who had charge of the services went out hurriedly on her way to the Community House to take the ham off the fire.

So I have been pursued by ham and have acquired this double barrel complex. Of course that has nothing to do with the story of steel. These pictures which I shall show you are, of course, silent pictures, as far as the film is concerned. We have not advanced to the stage in the Steel Corporation where we can put on sound pictures, but that may develop some time. This picture is taken from actual life in the operations of the United States Steel Corporation, beginning with the mining of the ore in Minnesota, the transportation of the same from the Great Lakes to the various terminal points, rail transportation, blast furnace operations, Bessemer, open hearth and electric, and the rolling of the heavy products such as rails, plates, etc., and the fourth film, which was requested for this meeting, showing the rolling of tin plate. As far as I know these are all in good order. We have had them gone over very carefully. We have an expert operator. So if you will turn to the screen we will start the performance.

Of course we can only hit the high spots. This is a preliminary scene showing a Bessemer converter. This is one of the ways in which iron is refined.

You can find iron ore in all the various parts of the world. Here you have it in the United States. This shows how they transport iron ore from the iron mines to the steel centers. This is the way iron ore appears in the earth. Here is open pit mining, which is the easiest method of mining. The interesting thing about that is that they had to move a whole town that was over the iron bed in order to get at the iron ore. That is a picture of a pit mine. These operations are carried on at a number of different levels simultaneously.

This shows the general development of shaft mining, down to a depth of 1500 feet, entering at different levels. This is a shaft house and the outside rigging, very similar to what you are familiar with in mining coal. This shows the wash rooms. In some mines they are below the surface. These are the houses in the mining district in which the miners live.

The ore is loaded into railroad cars and conveyed to the ore docks. The ore is then dumped into pockets, from which it is loaded into boats. All this ore is sampled and analyzed, first at

the mine and again at the pocket. Some of these steamers will carry 14,000 tons of ore. At the docks, being filled with iron ore. You can see the ore running through chutes down into the steamers. Mechanical unloaders empty the boats. You see the steamer at the dock. It takes ten hours to unload about 10,000 tons, and it scrapes the bottom clean. Where the steel plants are located directly on the lake shore the ore is unloaded directly into the plants. Plants such as Gary. It requires cars, gantry cranes, yards, stock piles, etc. This shows the method of loading it into cars, just like coal is loaded in Pittsburgh and surrounding territory.

Here is a view of Gary, which is one of the large corporation plants. Gary, as you know, is right on the lake and the ore is unloaded directly into the plant. Every attention is given to the safety and welfare of the workers. We have organized safety activities, accidents have been reduced 80 per cent. The safety instruction begins with the employment of the man and is carried through every stage of his employment. More than 10,000 employees serve regularly on the safety committees and 150 safety engineers and supervisors give their whole time to accident prevention in the Steel Corporation. This shows a typical department safety rally. Injuries when they do occur are promptly treated in plant dispensaries. This is the base hospital at Gary. This shows the restaurant and cafeteria. These houses can be sold to or rented by the employees. The whole town of Gary, Indiana, was developed and built by the Steel Corporation.

A blast furnace, where the ore receives its first treatment. Skip hoists charge the furnace with ore, limestone and coke. The limestone serves to remove the impurities. This is a by-product coke plant. It is charged with coal and arrangements made to retain the gases of the coking process and from these the by-products recovered are coal gas, tar and certain chemical by-products. When the coal is coked the ovens open at the sides and the coke is pushed out the ends.

There is a valve at the top of the furnace to keep the gases in. Two-thirds of the gas produced by the furnace is utilized in the production of power. The gas is passed through downcomers and the dust is taken out of it. The waste gases pass out through the stack. Two-thirds of the power generated from the gas is used to generate electricity. The air goes through blowing engines through the hot blast stove and then to the blast furnaces. The temperature of the furnace reaches a maximum of

2750°. At the bottom the iron appears as drops of molten iron. The slag floats on top and the iron at the bottom. The slag is drawn off through a cinder notch. The iron notch is plugged with clay that has to be drilled out to let the iron flow out. From 100 to 120 tons of iron are made every four or five hours.

The molten iron is conveyed by ladles to the mixer. The mixer serves to equalize the temperature and analyses of the iron. After mixing, the iron is ready to be made into steel. Most steel is made either by the Bessemer, open hearth or electric process. This is a Bessemer converter. It is lined with refractory material. Air is forced through from the outside and consumes the impurities of the iron. The open hearth furnace is heated by the combustion of preheated gas. Hot brick checker works heat the gases; the air is heated in the same way, and the gas and air are reversed from time to time similar to the operation of the blast furnace checkers. The electric process is used in making high grade alloy steels. This shows the charging of an electric furnace. In all these processes the molten steel is poured into molds to form ingots, in what they call ingot molds. The ingot is then passed on to a gas heated soaking pit where the temperature is equalized previous to rolling.

Over 60,000 employees own stock in the Steel Corporation purchased by the Employees Purchase Plan. Pension system: a group of pensioners. Sailing under the American flag, steel products are carried to all parts of the world.

The Manufacture of Rails

The ingot is taken from the soaking pit with all parts of the ingot at the same temperature. The first operation is the rolling of the ingot. They break it down in the rolls. The rolls are operated either by steam or electricity, the old method being steam and the modern method being electricity. This is the rail mill. The rails are cut into standard lengths when red hot by a circular saw and the ends drilled. This is the process of inspection of the finished product. It is done both by our own inspector and by the inspector of the purchaser.

Rolling plates for tank or car purposes. This is a much simpler process than rolling rails. It goes back and forth with a plane surface simply reducing the thickness. The last operation is the straightening rolls when the plate is almost cold. Here is the measuring and shearing tables. It is all marked out very carefully.

Here they are rolling I beams, very similar to rolling steel rails except the shape. Of course you understand in all these processes the analysis of the steel is very carefully watched and it must keep to specifications.

Rolling merchant bar. The sections are much smaller here. Rolling bars, the billets are heated white hot when they are ready for the rolls. After passing through the roughing rolls they must be reheated. This shows the inside of the heating furnace. Here they are going through the various passes in the various stages of the reduction process. These are the finishing rolls. The red hot rods are wound on steel spools and removed when hot.

The employees are served with many conveniences. Here are wash rooms. Educational advantages are extended to all employees. The courses covered run all the way from teaching English to special vocational education. Here is a class in mechanical drawing. The employees are encouraged to engage in athletics. Picnics for the families of the employees are held in the parks. Swimming pool.

Rolling Tin Plate Sheets

After roughing the plate is doubled and reheated. The pack now contains four sheets. Doubling again makes eight sheet packs. The packs are trimmed. After trimming, the eight sheet pack is again reheated and receives the finishing pass. A cool blast of air plays constantly on the workman. The floor plates are water cooled. A refrigerating plant furnishes cold water for drinking purposes. This shows a refrigerating plant. After the pack is sheared the plates are separated. The plates are pickled when hot to remove the oxides and scale. After washing, to remove the acid of the pickling bath, the plates are piled for annealing, packed in boxes and taken to the annealing furnaces. After being in the annealing furnace about 27 hours the plates are removed and cooled. The plates are then passed through several courses of highly finished cold rolls. After being annealed the plates are again pickled and placed in boshes under water. The boshes go to the tin house where the plates are covered with pure tin. This shows how a tinning machine works. The wet plates pass through a zinc chloride flux into molten tin. Hot palm oil assists in distributing the tin. The plates are then sorted into primes and seconds. When small sizes are desired the plates are slit. They are then cut and ready for boxing. The girls have their own building, with wash rooms, lockers and other conveniences.

Sheets for galvanizing. This is done in a somewhat different way. The zinc crystallizes and spangles on the sheets. Corrugated sheets are made by running through fluted rolls after they are galvanized.

Welfare work. Visiting nurses are always ready to assist employees' families. Practical house keeping centers are maintained for the instruction of employees' families in sewing, baking, etc.

The manufacture of high quality steel plates. Three high rolls, tilting table entry. From the finishing mill the plate passes to the annealing furnace. After annealing the plate goes to the straightening rolls. The plate is then sheared and cut to size.

Wash rooms after the day's work is done.

Company houses.

If there are any questions I will be glad to answer them to the best of my ability.

PRESIDENT: I think we have seen something most interesting. I notice generally if you listen to a man talking that long, people begin to twist and move around in their chairs, but I did not see any such action. I think we were all carried away, even though most of us have seen these things. I am not so sure that some of the steel men have not learned something about their business. I think we owe a vote of thanks to Mr. Oartel and the Carnegie Steel Company for the privilege of seeing these pictures and hearing Mr. Oartel. Does any one wish to discuss the subject? If not, it would be very delightful if the chorus would give us a little more music.

The Glee Club then favored the Club with another program of most enjoyable music.

PRESIDENT: I wonder if the Committee on Nominations is ready to make its report. Mr. Emery?

MR. E. EMERY: We are, Mr. President. We offer for your consideration the following report:

FOR PRESIDENT:

Professor Louis E. Endsley, Consulting Engineer.

FIRST VICE-PRESIDENT:

J. E. Hughes, Superintendent, P. & L. E. R. R.

SECOND VICE-PRESIDENT:

F. I. Snyder, Vice-President and General Manager, B. & L.
E. R. R.

TREASURER:

E. J. Searles.

SECRETARY:

J. D. Conway.

EXECUTIVE COMMITTEE (Nine to Elect):

Frank J. Lanahan, Chairman,
A. Stucki,
Samuel Lynn,
D. F. Crawford,
F. G. Minnick,
G. W. Wildin,
E. J. Devans,
W. S. McAbee,
E. W. Smith.

SUBJECT COMMITTEE (One to Elect):

C. O. Dambach.

ENTERTAINMENT COMMITTEE (Two to Elect):

A. B. Severn,
Joseph H. Kummer.

MEMBERSHIP COMMITTEE (Three to Elect):

F. L. Dobson,
J. L. O'Toole,
A. F. Coulter.

RECEPTION COMMITTEE (Two to Elect):

F. H. Freshwater,
W. P. Buffington.

FINANCE COMMITTEE (Four to Elect):

Charles Orchard,
John B. Wright,
R. P. Forsberg,
Harry W. Lehr.

PRESIDENT: I thank you very much. Some time before the next meeting you will receive letter ballots, as it is the custom of our Club to hold its election by letter ballot.

I would like to call your attention to the fact that the next meeting is the Annual Meeting and Smoker. All those who have attended these meetings in the past have had a very pleasant time. Due notice will be given of the meeting by the Secretary.

PRESIDENT: Is there any further business that should come before the Club at this time? If not, a motion to adjourn will be in order, and after adjournment you will repair to the table in the rear of the room, where lunch has been prepared for you.

ON MOTION: Adjourned.

J. D. CONWAY, Secretary.

In Memoriam

JOHN P. REARDON

Died, May 24, 1930

J. L. ROWE

Died, June 5, 1930

THOMAS D. EVANS

Died, June 22, 1930

R E S E R V E D

CAR LIGHTING

COMPLETE EQUIPMENT

ELECTRIC OR GAS



The Safety Car Heating and Lighting Co.
 New York Chicago St. Louis Boston Philadelphia San Francisco Montreal

RAILWAY STEEL-SPRING CO.

Springs, Steel-Tired Wheels,
 Locomotive and Car Wheel Tires.
 Pressed Steel Journal Box Lids.

GENERAL OFFICE, 30 CHURCH STREET, NEW YORK
 BRANCH OFFICES—Chicago, St. Louis, St. Paul, Richmond, Denver,
 San Francisco, Dallas, Montreal, Que., Pittsburgh, Detroit, Cleveland

Roller Bearings Without Complications

By mounting the roller bearing within the hub of the wheel the American Steel Foundries Roller Bearing Unit greatly simplifies maintenance work.

Handle it as you would any wheel and axle assembly. No adjustments are needed. Just roll it into place.

AMERICAN STEEL FOUNDRIES

New York

CHICAGO

St. Louis

YOUNGSTOWN

ALL STEEL CORRUGATED FREIGHT CAR DOORS

CAMEL

FREIGHT CAR DOOR FIXTURES

Weather and Burglar Proof

Top or Bottom Supported

CAMEL SALES COMPANY

332 South Michigan Avenue

CHICAGO, ILLINOIS

Pressed Steel Car Co.

MANUFACTURERS OF

FREIGHT and PASSENGER

-:- CARS -:-

CASTINGS

FORGINGS

BOLSTERS

BRAKEBEAMS

TRUCKS

UNDERFRAMES

GREY IRON WHEELS

COMPLETE FACILITIES FOR REPAIRING CARS

OFFICES

New York

Pittsburgh

Chicago

St. Paul

Standard Steel Car Co.

OFFICES

General Offices: Frick Bldg., PITTSBURGH, PA.
NEW YORK, 170 Broadway
CHICAGO: Fisher Building

WORKS

Butler, Pa.
New Castle, Pa.
Hammond, Ind.

STEEL AND COMPOSITE

FREIGHT CARS

For all Classes of Service, from our Standard Designs,
or according to Specifications of Purchasers.

Steel Car Underframes

TRUCKS, BOLSTERS, BRAKE BEAMS, ETC.

Capacity 50,000 Cars per Annum INQUIRIES
SOLICITED

Union Steel Casting Company

Pittsburgh, Pa.

Cast Steel Locomotive Frames, Driving Wheel
Centers, Locomotive Steel Cylinders and
Miscellaneous Steel Castings

Vanadium, Nickel and other Alloy Steel Castings a
Specialty

CAR HEATING SPECIALTIES

Use "VAPOR"

Metallic Two-inch Steam Con-
nections between all Cars.

Automatic Temperature Control
Vapor System on all Cars.

VAPOR CAR HEATING CO., Inc.

Railway Exchange - Chicago, Ill.

GENERAL REFRACTORIES COMPANY

Home Office
PHILADELPHIA, PA.

Manufacturers of High Grade Fire Brick
For All Railroad Purposes

Locomotive Arch Brick
Direct from Manufacturer to Consumer

Consignment Stocks, Prompt Deliveries
Quality and Service Assured

RAILWAY SALES DEPARTMENT

Graybar Building—420 Lexington Avenue
New York City



H. & K.
Double Rotating Chair
No. 900

CHAIR CAR COMFORT IN DAY COACHES

These Luxurious Chairs

—bring to a focus the steady improvement made in Hale & Kilburn car seats during the last half century. The tendency in this development has been constantly towards greater comfort, larger and more commodious seats, softer springs and greater beauty.

Hale & Kilburn Co.

General Offices and Works:
1800 Lehigh Ave., Philadelphia

NATHAN

MECHANICAL LUBRICATORS

WATER COLUMNS INJECTORS LUBRICATORS
LOW WATER ALARMS

Locomotive and Stationary Boiler Fittings

NATHAN MANUFACTURING CO., 250 Park Avenue, New York

From the Early Period
of the Telegraph to the present
remarkable development in the field of Electricity

KERITE

has been continuously demonstrating the
fact that it is the most reliable and
permanent insulation known

KERITE INSULATED WIRE & CABLE COMPANY

NEW YORK

CHICAGO



Performance!



CONSIDER the locomotive in the broad light of a means of producing transportation.

Viewed in this light, the value of a locomotive to the railroad is measured by its ability to produce maximum gross-ton-miles-per-hour economically.

Stoker fired locomotives haul more tons and at higher speeds because they increase the sustained steam capacity of the locomotive.

The added locomotive earning power resulting from stoker firing justifies stoker application to any locomotives, large or small.

THE STANDARD STOKER COMPANY, Inc.

New York

Erie

Pittsburgh

VULCAN

CRUCIBLE STEEL COMPANY

Established in 1900

ALIQUIPPA, PA.

*Makers of the better grades of Tool Steel, and the
pioneers in the manufacture of high quality
Vanadium Steels.*

KING

METALLIC

for Locomotive Piston
Rods, Valve Stems and
Air Pumps.



PACKINGS

King Sander
Security Latch
King Indestructible Oil Cups
King Hand Boring Lathe
Gollmar Bell Ringer
Leach Sanders

Reg. U. S. Pat. Off.

THE U. S. METALLIC PACKING CO.

PHILADELPHIA, PA.

?

Enough

QUESTION: How much lock should a Lock Nut have?

ANSWER: Just enough lock to hold; to stay on the bolt and resist vibration.

QUESTION: How much lock is "just enough?"

ANSWER: That amount of lock that you will find in every Grip Lock Nut.

Twenty-three years of experience has taught the art of making a Grip Lock Nut that can be applied with the minimum amount of labor, that has just enough lock to hold against all vibration; a Lock Nut that can be applied and reapplied without injuring the threads.

GRIP NUT COMPANY

5917 S. Western Ave., - Chicago, Illinois

TUCO PRODUCTS CORPORATION

Tucolith Composition Flooring
Flexolith Composition Flooring
Royal Adjustable Car Window Screens
National Standard Steel Trap Doors
Universal Steel Trap Doors
Trap Door Locks and Holders
Tuc National Standard & Traction Roofing
Tuc Specially Treated Cab Curtain
Material
Tucocendur Plates

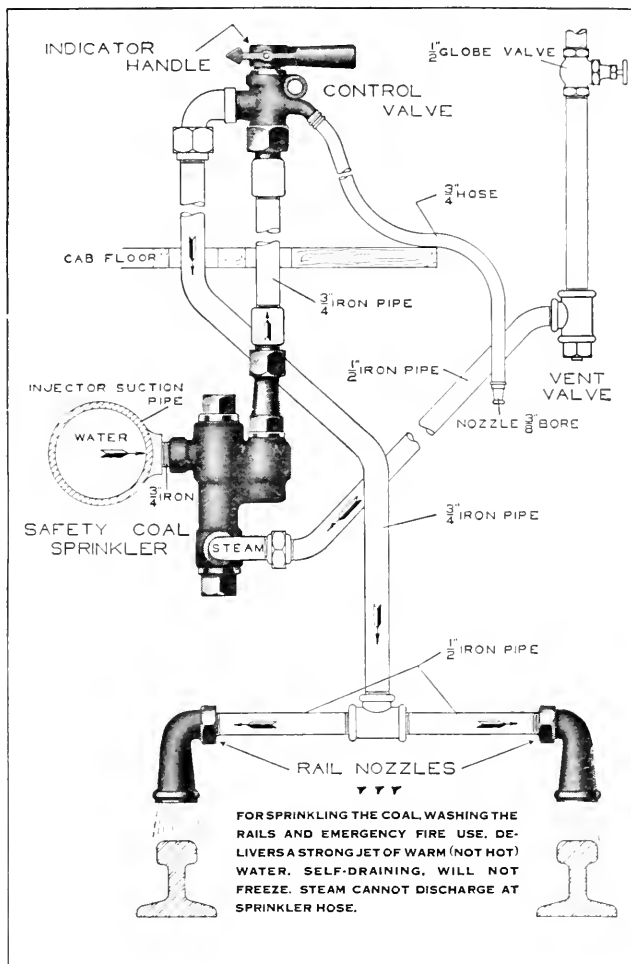
30 Church Street,
New York

Tuco Long Wear Floor Dressing
Resisto Hairfelt Insulation
Tuc Rockwul-Jacket Insulation
Tucork Insulation for Car Floors
Tuc Floor Plate Preservative
Eclipse Deck Sash Ratchets
Steel Car Sheathing, Panels and Slats
Reliance Sash Balances
Perfection Sash Balances
Brown Window Sash Weatherstrips

Railway Exchange Building,
Chicago

The SELLERS

SAFETY COAL SPRINKLER AND RAIL WASHER



RAILROAD SHOP TOOLS

Driving Wheel Lathes—Car Wheel Lathes—Axle Lathes—
Driving Box Boring and Facing Mills—Car Wheel Boring
Mills—Boring and Turning Mills—Planers—Tool Grinders—
Drill Grinders, etc.

WM. SELLERS & CO., Incorporated
Philadelphia, Pa.

BOILER COMPOUNDS

SOOT REMOVER



Buckeye Chemical Co.

Factory and Laboratory:

DETROIT, MICH.

Pittsburgh, Pa.
5621 Wellesley Ave.
Montrose 1362

Rochester, N. Y.
82 St. Paul St.
Main 3084

Over Thirty Years Serving the Engineer

Donated by A Friend

for welding and cutting



in the railroad shops of Pittsburgh district and thruout the country —
Airco Oxygen—Airco Acetylene—Airco-Davis-Bournonville Welding and Cutting Apparatus—Supplies.

AIR REDUCTION SALES CO.

Pittsburgh—1116 Ridge Avenue

New York—342 Madison Avenue

**OKONITE (RUBBER) and VARNISHED CAMBRIC
INSULATED WIRES and CABLES**

Manson Tape

THE OKONITE COMPANY

Okonite Tape

Founded 1878

THE OKONITE-CALLENDER CABLE COMPANY, Inc.

Factories: Passaic, N. J. - Paterson, N. J.

Sales Offices:

New York - Chicago - Pittsburgh - St. Louis - Atlanta
Birmingham - San Francisco - Los Angeles - Seattle - Dallas



SUPERHEATERS

DESIGNING ENGINEERS AND MANUFACTURERS
OF ELESKO STEAM SUPERHEATERS FOR
LOCOMOTIVE, MARINE AND STATIONARY
BOILERS



FEED WATER HEATERS, EXHAUST
STEAM INJECTORS AND PYROMETERS
FOR LOCOMOTIVES

17 East 42nd Street
NEW YORK

THE SUPERHEATER COMPANY

Peoples Gas Building
CHICAGO

OFFICIAL PROCEEDINGS RAILWAY CLUB OF PITTSBURGH

\$1.00 Per Year

25¢ Per Copy

Vol. XXIX

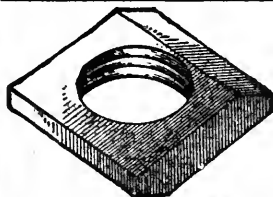
OCTOBER 23, 1930

No. 9

ANNUAL MEETING—ELECTION OF OFFICERS—
LIST OF MEMBERS

Steel Car Forge Company PITTSBURGH, PENNSYLVANIA

FORGINGS



Dieter Lock and Holding Nuts

STANDARD SAFETY NUT
CORPORATION

30 CHURCH ST.

NEW YORK

LOX-ON DEVICES CORPORATION

PAUL W. DIETER, President

30 CHURCH STREET

NEW YORK CITY

LEWIS IRON, "The Iron Superior"

Penn Iron & Steel Company, Creighton, Pa.

SOLE SALES AGENTS,

Joseph T. Ryerson & Son, Inc., Chicago, Ill.

OFFICIAL PROCEEDINGS
OF
The Railway Club of Pittsburgh

Organized October 18, 1901

Published monthly, except June, July and August, by The Railway Club of Pittsburgh, J. D. Conway, Secretary, 515 Grandview Ave., Pittsburgh, Pa.

Entered as Second Class Matter February 6, 1915, at the Postoffice at Pittsburgh, under the Act of March 3, 1879.

Vol. XXIX
No. 9.

Pittsburgh, Pa., Oct. 23, 1930

\$1.00 Per Year
25c Per Copy



**The Standard
For Accuracy**



**Cut Quicker
Last Longer**



**Accurate
Reliable**

Starrett

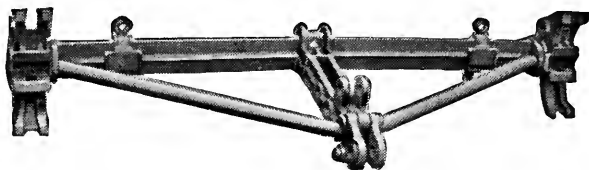
THE L. S. STARRETT CO., ATHOL, MASS., U. S. A.

BRAKE BEAMS

"Solid Truss"
and
Built-Up Types

AND

Brake Beam Supports



DAVIS "SOLID TRUSS" PASSENGER BEAM

ALSO

Pressed Steel Journal Box Lids

DAVIS BRAKE BEAM CO.

JOHNSTOWN, PA.

Sales Office: 418 Sixth Avenue, Pittsburgh, Pa.

GOULD

Side Frames

Bolsters

Couplers

Passenger and Freight Journal Boxes

Open Hearth Steel Castings

THE GOULD COUPLER CO.

WORKS: DEPEW
CLEVELAND

NEW YORK

CHICAGO

Lacquers
Varnish
Enamels
Oil Colors

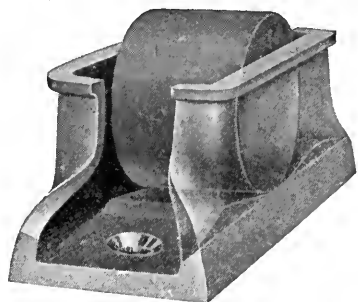


REG U S PAT OFF.

Railway and
Industrial
Protective
Coatings

JAMES B. SIPE AND COMPANY

PITTSBURGH, U. S. A.



STUCKI Side Bearings

A. STUCKI COMPANY
OLIVER BUILDING
PITTSBURGH, PA.

Canadian Representative
THE HOLDEN CO., LTD.
Montreal, Canada.

SINGLE PLATE CHILLED TREAD WHEELS

With
Reinforced Flanges for the Most Severe Service
Over 4,500,000 in Service

SOUTHERN WHEEL COMPANY



*Our tests determine the best
shoe for each type of service.*

The American Brake Shoe and Foundry Company

230 Park Ave., New York

332 So. Mich. Ave., Chicago

The Pocketlist of Railroad Officials

*Used by the Officers of all Railroads on
The North American Continent*

Issued Quarterly

Subscription Price, \$6.00 per annum

Single Copies, \$2.50

Advertising rates on application

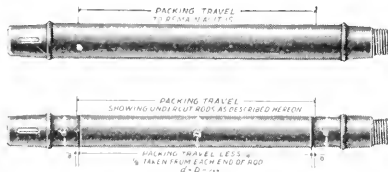
THE OFFICIAL RAILWAY EQUIPMENT REGISTER ISSUED MONTHLY

Descriptive of freight and passenger cars of the Railways and
Private Car Companies in the United States, Canada and Mexico.
Subscription Price, \$18.00 per annum. Single Copies, \$2.50.

THE RAILWAY EQUIPMENT AND PUBLICATION CO.

J. ALEXANDER BROWN, Vice-President and Manager
424 West 33rd Street New York

IF WE stated we could sell you the same steel you are now using for your piston rods at half the price you are paying, you would be greatly interested. Well, we can practically do that and make an additional saving of half the cost of labor required in preparing the rod for the engine by undercutting, as illustrated in cut below, instead of grinding or turning the wearing surface. That practice will extend the life of the rod fifty per cent or more. Paxton-Mitchell Metallic Packing will pack its own wear steam-tight until a rod has been reduced one-quarter of an inch. You will also save the cost of one set of packing, one sliding plate and one cone each time engine is in for general repairs.



Half sets of our packing segments may be reclaimed from scrap for use in making at least fifty per cent of renewals due to the four segment combination of our packing, which practically reduces the cost of making the renewals one-half.

"The Packing That Packs"

The Paxton-Mitchell Company
OMAHA, NEBRASKA

NATIONAL FRICTION DRAFT GEAR

The Perfect Shock Absorber

Requires No Re-Adjustment

NATIONAL MALLEABLE AND STEEL CASTINGS CO.

General Office — Cleveland, O.

Overcoming scale formation, foaming, pitting and corrosion in steam boilers economically, by scientific methods, has been the principal work of the Dearborn Chemical Company during the past forty-three years. Inquiry invited.

DEARBORN CHEMICAL COMPANY

310 S. Michigan Avenue, Chicago 205 East 42nd Street, New York
Farmers Bank Bldg., Pittsburgh



SYMINGTON

Malleable Iron and Steel Journal Boxes
for Passenger and Freight Equipment

FARLOW DRAFT ATTACHMENTS

THE SYMINGTON COMPANY

New York Chicago Boston Baltimore Rochester Cleveland

BALL'S
Varnish Remover

OXOLIN
REGISTERED
THE IDEAL PAINT OIL

B. C.
Spirits

Ball Chemical Company

CHICAGO Office,
53 W. Van Buren Street.

Fulton Bldg., PITTSBURGH, PA.

Schaefer Drop-Forged Brake Levers



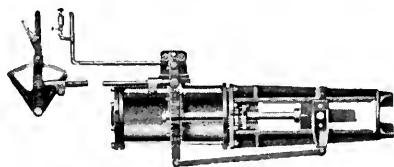
Designed to give uniform stress conditions throughout entire body of lever. Levers are drilled from templates and exact spacing between holes is thus assured.

Drop forging makes all levers uniform.

Lighter in weight with increased strength.

Schaefer Equipment Co.

General Offices: Koppers Bldg., Pittsburgh, Pa.



ALCO REVERSE GEAR

THE Alco Reverse Gear is designed to meet the demands of diversified service. It responds well not only to the needs of heavy freight service, but equally well to the needs of high speed passenger service. Again, in fast freight, helper and switching service it gives quick and accurate valve gear adjustments. In other words, it meets the conditions imposed on all classes of service—it does not excel in one at the expense of another.

American Locomotive Company

30 CHURCH STREET

NEW YORK CITY

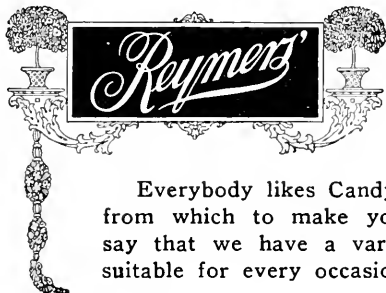
Union Spring and Manufacturing Co.

Manufacturers of

**COIL SPRINGS, SPRING PLATES, ELLIPTIC SPRINGS,
KENSINGTON (All Steel) JOURNAL BOX, JOURNAL
BOX LIDS, ELECTRIC STEEL CASTINGS**

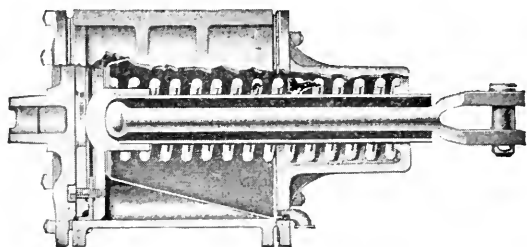
WORKS—NEW KENSINGTON, PA.

PITTSBURGH OFFICE—2001 CLARK BUILDING



CANDIES

Everybody likes Candy—with almost a thousand candies from which to make your selection, we can truthfully say that we have a variety to suit every taste—a box suitable for every occasion.



This New Protector Keeps Cylinders Clean

A collapsible water-proof hood that prevents moisture and dirt from reaching the cylinder walls. Lengthens life of packing cups, reduces leakage, decreases maintenance cost. . . Ask for Circular Notice 1082.

Westinghouse Air Brake Co., Wilmerding, Pa.

From Lamps to Locomotives



The Westinghouse Electric and Mfg. Co. is prepared to take care of your *every* electrical need.

When thinking electrically,
think—

Westinghouse

Grant Building

Pittsburgh, Pa.

MODERN POWER IS ECONOMICAL

Many important railroads are discarding power of relatively low capacity and efficiency, and replacing such locomotives with high-power units of the most modern type, thereby effecting important economies in operation and maintenance.

THE BALDWIN LOCOMOTIVE WORKS
PHILADELPHIA

Union Steel Casting Company

Pittsburgh, Pa.

**Cast Steel Locomotive Frames, Driving Wheel
Centers, Locomotive Steel Cylinders and
Miscellaneous Steel Castings**

**Vanadium, Nickel and other Alloy Steel Castings a
Specialty**

CAR HEATING SPECIALTIES

Use "VAPOR"

{ **Metallic Two-inch Steam Con-
nections between all Cars.**
**Automatic Temperature Control
Vapor System on all Cars.**

VAPOR CAR HEATING CO., Inc.
Railway Exchange - Chicago, Ill.

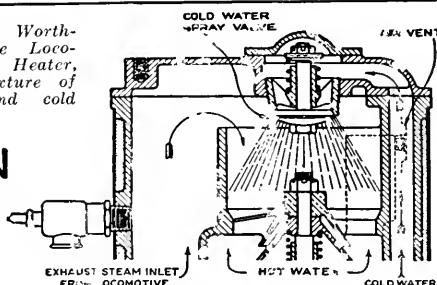
Spray valve of Worthington Open Type Locomotive Feedwater Heater, showing direct mixture of exhaust steam and cold water

WORTHINGTON



Open Type

Locomotive Feedwater Heating Equipment



gives these results:

1. Saves 12% of fuel
2. Saves 14% of water
3. Increases boiler capacity 10% to 13%
4. Increases drawbar pull at speed
5. Reduces stops for water and coal
6. Reduces boiler maintenance
7. Removes 80% to 90% of corrosive oxygen from feedwater
8. Purifies water
9. Reduces scale accumulation in boiler
10. Extends economic life of old engines by increasing steaming capacity and reducing fuel consumption

WORTHINGTON PUMP AND MACHINERY CORPORATION

Works: Harrison, N. J. Cincinnati, Ohio Buffalo, N. Y. Holyoke, Mass.

Executive Offices: 2 Park Avenue, New York, N. Y.

GENERAL OFFICES: HARRISON, N. J.

District Sales Offices or Representatives in 24 United States Cities

Branch Offices or Representatives in Principal Cities of all Foreign Countries

H-38

Factors that Increase Locomotive Effectiveness

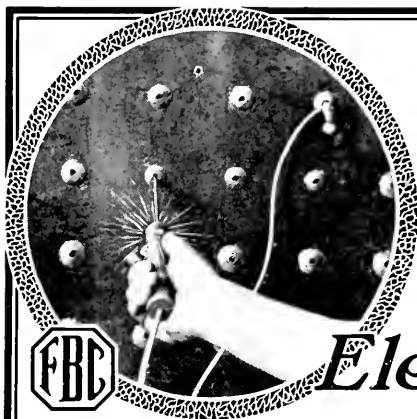


The Locomotive BOOSTER

Franklin Railway Supply Co., Inc.

17 East Forty-Second Street, New York

Chicago, Ill.	St. Louis, Mo.	San Francisco, Cal.
332 S. Michigan Ave.	Boatmen's Bank Bldg.	774 Monadnock Bldg.
Franklin Railway Supply Company, Limited, Montreal		
Export Department—International Railway Supply Co.		
30 Church Street, New York		



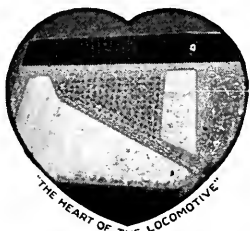
Inspect Flexible Staybolts *Electrically*

from inside the firebox

Nothing is removed from the outside of the boiler. Inspect staybolts with 100% accuracy — save days of labor and lost engine service — elimi-

nate material spoilage. For all new equipment and repairs specify Flannery Tell-Tales.

FLANNERY BOLT COMPANY
FLANNERY BLDG. PITTSBURGH, PA.



Nicholson Thermic SYPHONS

The Nicholson Thermic Syphon is a 100% safety device for protection against boiler explosions in case of low water.

Your Best Investment

LOCOMOTIVE FIREBOX CO.,

Chicago

New York

Montreal

Hunt-Spiller Air Furnace Gun Iron

HAS THE
Strength and Wearing Qualities
THAT ARE ABSOLUTELY NECESSARY IN
LOCOMOTIVE CASTINGS

PRICES MODERATE

Manufactured Only By

RESULTS GREAT

Hunt-Spiller Manfg. Corporation

J. G. PLATT, President and General Manager

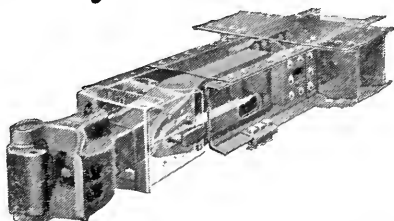
OFFICE AND WORKS:

383 DORCHESTER AVENUE
SO. BOSTON, MASS.

V. W. ELLET.
Vice President

The Buckeye Steel Castings Co.

COLUMBUS
NEW YORK
CHICAGO



ST. PAUL
LOUISVILLE
LONDON

“BUCKEYE” Yoke and Draft Attachments

FORT PITT SPRING COMPANY

PITTSBURGH, PA.

SPRINGS BOTH COIL
& ELLIPTIC

For Railroad Service

ALLOY SPRINGS A SPECIALTY

Malleable CASTINGS OF UNIFORM QUALITY ARE PERMANENT

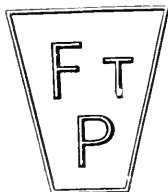
CURRENT AVERAGE TESTS

For 12 Months

910 Consecutive Heats

Tensile Strength, Yield Point Elong. %
Lbs. per sq. in. Lbs. per sq. in. in 2 in.

HIGH	61370	40420	28.1
LOW	56490	37210	22.6
AVERAGE	58344	38494	25.9



*This Trade-mark is your security on
Railroad Car Castings*

Send Blue Prints for Estimates

Fort Pitt Malleable Iron Company
PITTSBURGH, PA.

INDEX—ADVERTISERS.

NAME	Page	NAME	Page
Air Reduction Sales Co.....	xix	Penn Iron & Steel Co.....	Front Cover
American Brake Shoe & Foundry Co.....	ii	The Pocket List of Railroad Officials	ii
American Locomotive Co.....	v	Pressed Steel Car Co.....	xiv
American Steel Foundries.....	xiv	Railway Equip't. and Publication Company	ii
Baldwin Locomotive Works.....	vii	Railway Steel Spring Co.....	xix
Ball Chemical Co.....	iv	Reymer & Bros., Inc.....	v
The Buckeye Steel Casting Co....	x	Safety Car Heat. & Lighting Co....	xix
Camel Sales Co.....	xiv	Schaefer Equipment Co.....	iv
Chicago Railway Equip. Co.....	xii	Wm. Sellers & Co., Inc.....	xviii
Davis Brake Beam Co.....	i	Sipe, James B., & Co.....	i
Dearborn Chemical Co.....	iii	Southern Wheel Co.....	ii
Flannery Bolt Co.....	ix	Standard Safety Nut Corp. Front Cover	
Fort Pitt Malleable Iron Co.....	x	The Standard Stoker Co.....	xvi
Fort Pitt Spring Co.....	x	The L. S. Starrett Co. Inside Front Cover	
Franklin Rwy. Supply Co., Inc.	viii	Steel Car Forge Co..... Front Cover	
General Refractories Co.....	xv	Stucki Co., A.....	ii
The Gould Coupler Co.....	i	The Superheater Co..... Front Cover	
Grip Nut Co.....	xvii	The Symington Co.....	iv
Hale & Kilburn Co.....	xv	Tuco Products Co.....	xvii
Hunt-Spiller Mfg. Corporation	ix	Union Spring & Mfg. Co.....	v
The Kerite Insulated Wire & Cable Co., Inc.....	xvi	Union Steel Casting Co.....	vii
Locomotive Firebox Co.....	ix	U. S. Metallic Packing Co.....	xvii
Lox-On Devices Corp.....	Front Cover	Vapor Car Heating Co., Inc.....	vii
Nathan Mfg. Co.....	xv	Vulcan Crucible Steel Co.....	xvii
National Malleable and Steel Castings Co.....	iii	Westinghouse Air Brake Co.....	vi
The Okonite-Callender Cable Company	Front Cover	Westinghouse Elec. & Mfg. Co.	vi
Paxton-Mitchell Co.....	iii	Worthington Pump and Machinery Corporation.....	viii

"Nothing Rolls Like a Ball"



You can get away from
these conditions on
Box and Automobile
Cars

by using



**Ball-Bearing Door
Fixtures**

In Use on
36 Railroads



CHICAGO RAILWAY EQUIPMENT CO.
CHICAGO, ILLINOIS

OFFICIAL PROCEEDINGS
OF
The Railway Club of Pittsburgh

Organized October 18, 1901

Vol. XXIX
No. 9.

Pittsburgh, Pa., Oct. 23, 1930

\$1.00 Per Year
25c Per Copy

OFFICERS FOR 1929-1930

President E. W. SMITH,	
Vice President, The Pennsylvania Railroad, Pittsburgh, Pa.	
First Vice President PROF. LOUIS E. ENDSLEY, Consulting Engineer, Pittsburgh, Pa.	Secretary J. D. CONWAY, 1841 Oliver Building, Pittsburgh, Pa.
Second Vice President J. E. HUGHES, Superintendent, P. & L. E. R. R., Pittsburgh, Pa.	Treasurer E. J. SEARLES, Manager, Schaefer Equipment Company, Pittsburgh, Pa.

Executive Committee

FRANK J. LANAHAN, Pres., Fort Pitt Malleable Iron Co., P. O. Box 1054, Pgh., Pa.
A. STUCKI, Engineer, A. Stucki Company, 419 Oliver Bldg., Pittsburgh, Pa.
SAMUEL LYNN, Supt., Rolling Stock, P. & L. E. R. R., McKees Rocks, Pa.
D. F. CRAWFORD, Consulting Engineer, 5243 Ellsworth Avenue, Pittsburgh, Pa.
F. G. MINNICK, General Manager, P. & L. E. R. R., Pittsburgh, Pa.
G. W. WILDIN, Dist. Mgr., Cardwell Westinghouse Co., Pittsburgh, Pa.
E. J. DEVANS, General Superintendent, B. R. & P. Ry. Co., Du Bois, Pa.
W. S. McABEE, Vice President, Union Railroad Co., East Pittsburgh, Pa.

Membership Committee

E. A. RAUSCHART, Mechanical Superintendent, Montour Railroad, Coraopolis, Pa.
T. E. CANNON, Gen. Supt., Locos. & Equipment, P. & W. Va. Ry., Pittsburgh, Pa.
GUY M. GRAY, Superintendent Motive Power, B. & L. E. R. R., Greenville, Pa.
C. E. PEIFFER, Master Car Builder, B. R. & P. Ry., Du Bois, Pa.
J. S. LANAHAN, Vice President, Fort Pitt Malleable Iron Co., Pittsburgh, Pa.
E. EMERY, Railway Supplies, 1401 Oliver Building, Pittsburgh, Pa.
R. M. LONG, Air Brake Inspector & Instructor, P. & L. E. R. R., McKees Rocks, Pa.
DONALD O. MOORE, Mgr. of Traffic Division, Chamber of Commerce, Pittsburgh, Pa.
J. A. RALSTON, Mechanical Engineer, Union Railroad, Frick Bldg. Annex, Pgh., Pa.

Subject Committee

C. O. DAMBACH, Supt., P. & W. Va. Ry. Co., Wabash Bldg., Pittsburgh, Pa.
KARL BERG, Asst. Supt., Motive Power, P. & L. E. R. R., McKees Rocks, Pa.
S. G. DOWN, Vice President, Westinghouse Air Brake Company, Wilmerding, Pa.

Finance Committee

W. C. HANSEN, Sales Engineer, A. Stucki Co., 419 Oliver Bldg., Pittsburgh, Pa.
J. H. CARROLL, JR., Freight Traffic Mgr., B. & O. R. R., 821 Oliver Bldg., Pgh., Pa.
W. P. CUNNINGHAM, Supt. Motive Power, Monongahela Ry., 3169 Ashlyn St., Pgh., Pa.
LLOYD SUTHERLAND, General Storekeeper, P. & L. E. R. R., McKees Rocks, Pa.

Entertainment Committee

CHARLES ORCHARD, Special Agent, Traffic Dept., Carnegie Steel Co., Pgh., Pa.
F. M. BROWN, Supt., P. & L. E. R. R., Pittsburgh, Pa.

Reception Committee

O. L. WRIGHT, District Manager, The Duff-Norton Mfg. Co., Pittsburgh, Pa.
CHARLES J. NIEMAN, Secretary & Treasurer, Penn Iron & Steel Co., Creighton, Pa.
GEORGE F. LAURENT, Sales Engineer, Fort Pitt Malleable Iron Co., Pgh., Pa.
A. B. WHITE, Superintendent, B. R. & P. Ry. Co., Punxsutawney, Pa.
F. I. SNYDER, Vice President and General Mgr., B. & L. E. R. R., Pittsburgh, Pa.
COL. H. C. NUTT, Pres. & Gen. Mgr., Monongahela Railway Co., Pittsburgh, Pa.

Past Presidents

*J. H. McCONNELL.....	October, 1901, to October, 1903
L. H. TURNER.....	November, 1903, to October, 1905
F. H. STARK.....	November, 1905, to October, 1907
*H. W. WATTS.....	November, 1907, to April, 1908
*D. J. REDDING.....	November, 1908, to October, 1910
*F. R. McFEATHERS.....	November, 1910, to October, 1912
*A. G. MITCHELL.....	November, 1912, to October, 1914
*F. M. McNULTY.....	November, 1914, to October, 1916
J. G. CODE.....	November, 1916, to October, 1917
*D. M. HOWE.....	November, 1917, to October, 1918
*J. A. SPIELMANN.....	November, 1918, to October, 1919
H. H. MAXFIELD.....	November, 1919, to October, 1920
FRANK J. LANAHAN.....	November, 1920, to October, 1921
SAMUEL LYNN.....	November, 1921, to October, 1922
D. F. CRAWFORD.....	November, 1922, to October, 1923
GEO. D. OGDEN.....	November, 1923, to October, 1924
A. STUCKI.....	November, 1924, to October, 1925
F. G. MINNICK.....	November, 1925, to October, 1926
G. W. WILDIN.....	November, 1926, to October, 1927
E. J. DEVANS.....	November, 1927, to October, 1928
W. S. McABEE.....	November, 1928, to October, 1929

*—Deceased.

†—Resigned.

Meetings held fourth Thursday of each month except June, July and August.

PROCEEDINGS OF MEETING

OCTOBER 23, 1930

The Annual Meeting was called to order at the Fort Pitt Hotel at 8 o'clock, P. M., with President E. W. Smith in the chair.

The following gentlemen registered:

MEMBERS

Allison, John	Conway, J. D.
Altsman, W. H.	Coombe, A. B.
Ambrose, W. F.	Copeland, T. T.
Anger, C. E.	Cotter, G. L.
Anger, J. G.	Coulter, A. F.
Arnold, J. J.	Courtney, H.
Askin, J. A.	Covert, G. W.
Babcock, F. H.	Crawford, D. F.
Bachner, Martin G.	Crenner, J. A.
Beattie, J. A.	Crispen, R. B.
Beeson, H. L.	Croke, Thomas F.
Bell, D. H.	Cromwell, H. T.
Berg, Karl	Cunningham, R. I.
Berghane, A. L.	Dambach, C. O.
Bihler, L. C.	Darrall, W. G.
Bittner, George	Daugherty, W. A.
Boate, Harry S.	Davies, James
Bonhoff, E. L.	Davis, Charles S.
Bowen, James T.	Dehne, G. C.
Bowers, J. M.	Dellmin, T. D.
Bowery, Frank J.	Dempsey, P. W.
Boylan, P. F.	Descamp, J.
Braun, O. F.	Diven, J. B.
Brennan, T. F.	Doyle, Edward
Brinkhoff, W. H.	Doyle, William E.
Buffington, W. P.	Durkin, James E.
Bull, R. S.	Eagan, D. F.
Burel, W. C.	Edwards, C. H.
Byrne, W. L.	Emery, C. W.
Callahan, F. J.	Emery, E.
Campbell, Harry V.	Endsley, Prof. Louis E.
Campbell, J. T.	Everstine, A. P.
Cannon, T. E.	Fagan, R.
Carr, T. W.	Faix, Joseph
Carson, John	Farrington, R. J.
Carter, William	Fenton, H. H.
Cassiday, David A.	Fink, P. J.
Cherry, J. T.	Fischer, George E.
Christy, F. X.	Fisher, G. M.

Fisher, John J.	Johnston, W. A.
Fleckenstein, August	Kamerer, R. W.
Fletcher, A.	Kaup, E. W.
Flinn, R. H.	Kaup, H. E.
Fox, George W.	Keenoy, R. P.
Frauenheim, A. M.	Kelin, H. S.
Freshwater, F. H.	Kelly, Leo J.
Fritz, A. A.	Kerr, C. R.
Fults, J. H.	Ketchpel, Paul A.
Funfer, James	Keys, Arthur H.
Gaffney, Thomas H.	Kiefer, Fred
Gardner, George R.	Kirkpatrick, R. L.
Geisler, Joseph J.	Klann, Peter B.
Glaser, J. P.	Koehler, Paul A.
Glenn, J. H.	Kohl, H. J.
Goda, P. H.	Kummer, Joseph H.
Gordon, George A.	Lanahan, Frank J.
Gray, H. M.	Lang, W. C.
Grieve, Robert E.	Laughner, C. L.
Guger, Julius J.	Lawson, A. F.
Hall, Charles B.	Leach, W. A.
Haller, Jacob	Lee, L. A.
Haller, Nelson M.	Lees, Tom
Hamilton, W. H.	Lehr, H. W.
Hancock, Milton L.	Linsenbigler, Allen J.
Hansen, William C.	Lobez, P. L.
Harbaugh, Charles P.	Long, R. M.
Harper, G. C.	Long, Walter
Harper, James W.	Longdon, Clyde V.
Harper, John T.	Lynn, Samuel
Harvat, Frank V.	Lynn, W.
Hastings, W. S.	McIntyre, R. C.
Hayes, George W.	Maliphant, C. W.
Herlehy, David T.	Mason, S. O.
Herrick, A. S.	Mauck, Ernest A.
Herrold, A. E.	Meinert, Henry
Hiester, E. G.	Merscher, John
Hill, W. D.	Millar, C. W.
Hilstrom, A. V.	Miller, John
Holleran, T. J.	Miller, W. H.
Holmes, E. H.	Mills, C. C.
Honsberger, G. W.	Minnick, F. G.
Hood, C. E.	Misner, G. W.
Horner, William	Mitchell, Frank K.
Hughes, John E.	Mitchell, W. S.
Huntington, H. E.	Mogan, John M.
Hykes, W. H.	Moir, W. B.
Jenkner, Oscar	Moody, M. R.
Jones, H. W.	Moore, Donald O.
Jones, William M.	Moyer, Oscar G. A.
Johnston, George E.	Muir, R. Y.

Myers, Arnold
 McCrea, James G.
 McKenzie, Edward F.
 McKinley, A. J.
 McLaughlin, H. B.
 McMillan, A. P.
 McNamee, W.
 McNelty, A. P.
 McPherson, A. R.
 Nagel, James
 Nieman, C. J.
 Nieman, Harry L.
 Nutt, Col. H. C.
 Oberlin, A. C.
 O'Leary, J. J.
 Orchard, Charles
 Orr, D. K.
 Osborne, William J.
 O'Sullivan, John J.
 O'Toole, T. J.
 Painter, Joseph
 Paisley, F. R.
 Palmer, E. A.
 Patterson, John E.
 Peiffer, Charles E.
 Perkins, Charles F.
 Perry, W. E.
 Pillar, Michael
 Posteraro, S. F.
 Pringle, P. V.
 Provost, S. W.
 Rankin, B. B.
 Rauschart, E. A.
 Record, J. F.
 Redding, R. D.
 Reeve, George
 Renshaw, W. B.
 Rizzo, C. M.
 Robinson, R. G.
 Roth, Philip J.
 Rupp, E. S.
 Rushneck, G. L.
 Ryan, D. W.
 Sanders, H. D.
 Sattley, E. C.
 Schaffer, W. E.
 Schmitt, Raymond F.
 Schrecongost, C. P.

Schuchman, W. R.
 Searles, E. J.
 Seiss, William C.
 Seroky, Edward A.
 Severn, A. B.
 Shafer, John S.
 Shannon, David E.
 Sharp, H. W.
 Sheets, H. E.
 Shellenbarger, H. M.
 Sheridan, T. F.
 Showalter, Joseph
 Shull, George S.
 Smith, E. W.
 Smith, J. Frank
 Smith, R. W.
 Snyder, F. I.
 Spinning, C. F.
 Stamets, William K.
 Stamm, Bruce B.
 Steen, W. E.
 Stephen, James
 Stevens, L. V.
 Stoffregen, Louis E.
 Stucki, A.
 Sutherland, Lloyd
 Swanson, C. A.
 Sykes, A. H.
 Tomasic, Joseph D.
 Tomasic, N. M., Jr.
 Trautman, Harry J.
 Tucker, John L.
 Van Vranken, S. E.
 Van Wormer, G. M.
 Walther, G. C.
 Warner, Russell H.
 Warrensford, F. S.
 Waterman, E. H.
 Weaver, W. F.
 Whalen, Daniel J.
 Wheatley, William
 Wildin, G. W.
 Winslow, S. H.
 Wright, Edward W.
 Wright, John B.
 Wyke, J. W.
 Wynne, F. E.
 Yarnall, Jesse

Young, F. C.

VISITORS

Ainor, L. R.	Essen, L.
Abbott, L. A.	Evans, John B.
Alexander, Samuel	Eynon, William J.
Arnold, J. G.	Farrington, A. R.
Atkins, H. E.	Fennell, Samuel W.
Aukerman, J. W.	Ferguson, Donald S.
Bachner, Sylvester	Fisher, H. E.
Bailey, P. H.	Fisher, William R.
Baker, W. E.	Forrester, J. B.
Beatty, J. H.	Freud, E. F.
Bell, R. B.	Galloway, William R.
Berger, John S.	Gastner, R. F.
Bigley, Charles	Gemmell, Thomas H.
Bosley, W. D.	Gilles, J. C.
Bott, William J.	Gilmar, G. T.
Brandt, Wilbur	Givern, H. M.
Britt, T. E.	Goebel, Michael
Brown, R. J.	Goodwin, Arthur E.
Burgess, T. S.	Gray, Robert H.
Burriss, H. E.	Grimm, W. R.
Burriss, Walter C.	Griswold, Harold
Carbaugh, H. W.	Gamble, E. R.
Carruthers, G. R.	Geyer, H. L.
Chalmers, J. W.	Glaister, T. W.
Cherry, W. W.	Gollmer, H. C.
Christy, G. J.	Haas, Fred
Clark, John M.	Haller, William
Colclaser, L. A.	Harvat, Joseph
Conlan, J. R.	Haubrich, L. G.
Cornett, C. A.	Heer, Walter
Corrigan, William	Heimsberg, A. H.
Cravener, J. H.	Herbst, F. A.
Critchlow, Clifford	Hess, Fred W.
Cunningham, H. L.	Hildenbrand, L. B.
Davis, J. W.	Hoffman, Charles J.
Devalros, George	Hohn, H. A.
Dickson, H. B.	Hoking, A. C.
Divis, Louis	Holmes, James F.
Dizak, Jack	Hunter, D. C.
Driscoll, F. X.	Hunter, J. C.
Dunkerly, E. C.	Hurray, Charles A.
Dunn, C. A.	Ingraham, Byron G.
Dunn, R. G.	Jados, W. T.
Dunsmoor, F. L.	Janis, G. L.
Eason, G. H.	Jaquette, William
Edmonston, G. F.	Jennings, Emil
Edwards, G. H.	Jubb, Joseph S.
Edwards, William A.	Kalik, Frank
Emery, C. W., Jr.	Kalik, Joseph

Kelin, A. W.	Phlegan, A. B.
Keller, R. B.	Pickels, H. D.
Kimmich, K. J.	Plank, L. G.
Kirchner, Howard B.	Provost, William J.
Kiser, Harry	Pugh, A. J.
Kiser, John A.	Pursglove, Samuel
Knowles, A. H.	Rick, R. C.
Kyle, Clyde	Risan, E. T.
Larsen, O. C.	Ristway, Andrew
Lauric, F.	Robbins, John A.
Lee, A. L.	Robertson, W. L.
Luch, George R.	Ross, F. J.
Leonard, George I.	Roth, Walter P.
Lesko, Mike	Round, J. P.
Lewis, S. B.	Roush, Harvey R.
Luth, L. A.	Rupert, Lawson
Linsley, T. W.	Sabock, P. F.
Long, Walter F.	Schrontz, S. B.
Marsh, E. A.	Schuch, H. C.
Marshall, George	Searles, O. L.
Mayhe, Lewis	Serowchak, Michael
Miller, E. B.	Shepherd, W. B.
Miller, R. H.	Shimer, J. H.
Miller, W. S.	Shropshire, Paul
Molsen, Henry	Shultz, E. C.
Moore, D. M.	Smith, C. W.
Morris, A. T.	Smith, F. D.
Muinnis, James	Smith, Robert B.
Mullen, Morrell	Smith, Sion B.
Muller, Frank	Snyder, H. C.
Mullooly, C. J.	Spear, John
Mycoff, George H.	Sproat, W. J.
McBride, J. J.	Stephensky, John
McConn, G. E.	Stillwagon, C. K.
McConnell, John	Strahl, Herman
McConnell, W. J.	Taylor, George A.
McKenna, J. B.	Taylor, J. E., Jr.
McPaul, M.	Taylor, W. B.
McPherson, K. W.	Thompson, C. H.
McVicker, J. W.	Trabert, E.
Neely, Harold	Vogel, E. E.
Nicodemus, John	Walker, D. O.
Nicol, George S.	Ward, N. H.
Nigro, Nicholas	Wark, J. M.
Noble, R. F.	Weir, G. E.
Oschman, William	Wert, T.
Osman, Howard L.	Whalen, W. E.
Parmelee, H. B.	Wibner, A. J.
Peat, James	Wietzel, C. E.
Penn, C. D.	Wilberson, J. A.
Penn, William	Willbraham, E. L.

Worgan, Sidney J.
Yost, Carl W.

Yuhas, John
Zimmerman, C. R.

PRESIDENT: We have a long program for this evening, and with your consent we will dispense with the call of the roll and the reading of the minutes. The registration cards give us a record of attendance, and the minutes have already been published.

I will ask the Secretary to read the list of proposals for membership.

SECRETARY: We have the following proposals for membership:

Dellmin, T. D., Superintendent, The Lake Erie & Eastern Railroad Company, Struthers, Ohio. Recommended by Samuel Lynn.

Franenheim, Pierce H., Standard Auto-tite Joints Company, 916 Forbes Street, Pittsburgh, Pa. Recommended by A. M. Franenheim.

Peacock, W. W., Railway Products Company, 1918 Grant Building, Pittsburgh, Pa. Recommended by J. A. Egbert.

Weaver, W. Frank, Storekeeper, The Pullman Company, 7506 Formosa Way, Pittsburgh, Pa. Recommended by Harry W. Lehr.

Yarnall, Jesse, Assistant Yard Master, Pennsylvania Railroad, 123 Race Street, Edgewood, Pa. Recommended by Harry W. Lehr.

PRESIDENT: In accordance with our By-laws, these proposals will be referred to the Executive Committee, and upon approval by that Committee the gentlemen will become members without further action.

The first order of business of the Annual Meeting is the Annual Report of the Secretary, which I will ask Mr. Conway to read at this time.

SECRETARY:

SECRETARY'S REPORT

Pittsburgh, Pa., October 23, 1930.

To the Officers and Members of

The Railway Club of Pittsburgh.

Gentlemen:

The following is a summary of membership and financial

statement for the fiscal year ended October 23, 1930:

Reported last year.....	1,267
Reinstated	2
Received into membership during year.....	141
	—1,410
Suspended, non-payment of dues	61
Resigned	45
Loss of address.....	5
Deaths reported during year.....	20
	— 131
Present membership	1,279

Of the above membership four are honorary. They are: D. C. Buell, Samuel O. Dunn, Julian Kennedy and John A. Penton.

DECEASED MEMBERS

Name	Died
Morris B. Brewster.....	April 14, 1930
S. W. Caton.....	February 18, 1930
J. D. Coleman.....	February 9, 1930
James K. Cullen.....	July 31, 1930
D. L. Duffy.....	October 28, 1929
Thomas D. Evans.....	June 22, 1930
J. P. Gochmour.....	December 6, 1929
Harry D. Hammond.....	March 1, 1930
J. M. Hansen.....	December 13, 1929
C. A. Karns.....	October 11, 1930
Paul Langbein.....	July 18, 1929
Malcom F. Lewis.....	August 29, 1930
W. H. Miner.....	April 3, 1930
John H. Mitchell.....	January 16, 1930
John P. Reardon.....	May 24, 1930
J. H. Redding.....	February 2, 1930
George N. Riley.....	January 14, 1930
J. L. Rowe.....	June 5, 1930
J. T. Sleeman.....	January 13, 1930
D. L. Wilson.....	September 29, 1929

FINANCIAL

Receipts

In hands of Treasurer at close of last year..	\$7,522.41
From advertisements	1,981.91
From dues	2,856.00
From sale of Proceedings.....	41.00
Smoker tickets and dinner October 24, 1929.....	828.00
Return dues Railway Club Secretaries Society.....	10.00
Miscellaneous sources	491.50
From interest, Liberty Bonds and bank balance.....	177.77
	\$13,908.59

Disbursements

Printing Proceedings, Notices, Mailing, etc.....	\$2,676.35
Hall, luncheon, cigars, etc.....	858.19
Reporting Proceedings	180.00
Salaries and advertising expenses.....	1,198.19
Premium on bonds, Treasurer and Secretary.....	17.50
Miscellaneous items	474.50
Dinner, entertainments, etc., Smoker, October 24, 1929.....	1,048.00
Moving pictures	40.00
Messenger service, affidavits, etc.	19.50
Dues Railway Club Secretaries Society.....	15.00
	\$ 6,527.23
Net Balance	\$ 7,381.36

Balance is made up of \$5,381.36 cash and two United States Liberty Bonds \$1,000.00 each.

J. D. CONWAY, Secretary.

Approved:

FRANK J. LANAHAN, Chairman	F. G. MINNICK
A. STUCKI	G. W. WILDIN
SAMUEL LYNN	E. J. DEVANS
D. F. CRAWFORD	W. S. McABEE

Executive Committee.

PRESIDENT: I will ask you to rise in a silent tribute to the memory of our deceased members.

The Annual Report of the Treasurer will now be presented to you.

MR. SEARLES:

TREASURER'S REPORT

To the Officers and Members of
The Railway Club of Pittsburgh.
Gentlemen:

I herewith submit Treasurer's Report for the year ended October 23, 1930:

ON HAND AND RECEIPTS

On hand October 24, 1929	\$5,522.41
Cash received from J. D. Conway, Secretary.....	6,208.41
Interest on Liberty Bonds.....	85.00
Interest on bank balance.....	92.77
Total	<hr/> \$11,908.59

DISBURSEMENTS

Paid on Secretary's vouchers Nos. 687 to 714, inclusive	6,527.23
Balance	<hr/> \$5,381.36

RESOURCES

Two U. S. Liberty Bonds, \$1,000.00 each.....	\$2,000.00
Cash balance on hand October 23, 1930.....	5,381.36
Total	<hr/> \$ 7,381.36

E. J. SEARLES, Treasurer.

Approved:

FRANK J. LANAHAN, Chairman	F. G. MINNICK
A. STUCKI	G. W. WILDIN
SAMUEL LYNN	E. J. DEVANS
D. F. CRAWFORD	W. S. McABEE

Executive Committee.

PRESIDENT: What is your pleasure as to these two reports?

ON MOTION the reports are accepted and approved.

We have audited the accounts of the Secretary and Treasurer, and find them correct as reported.

WILLIAM C. HANSEN, Chairman,
J. H. CARROLL, JR.,
LLOYD SUTHERLAND,
Members of Finance Committee.

SECRETARY: Since our last meeting we have received information of the death of the following members:

Name	Died
James K. Cullen.....	July 31, 1930
Harry D. Hammond.....	March 1, 1930
C. A. Karns.....	October 11, 1930
Malcom F. Lewis.....	August 29, 1930

PRESIDENT: These names will be added to the list in the Annual Report, and also an appropriate memorial minute will appear in the next issue of the Proceedings.

SECRETARY: It is with a feeling of sadness that we note that the number of our members whom we have lost by death during the past year is larger than that of any year during the entire period of the Club's history.

PRESIDENT: I will ask the Secretary to read the report of the Tellers of Election.

Secretary reported result of the election as follows: Total number of votes cast 252 and the vote in each case practically unanimous for the gentlemen named:

PRESIDENT—Professor Louis E. Endsley, Consulting Engineer.

FIRST VICE PRESIDENT—J. E. Hughes, Superintendent, P. & L. E. R. R.

SECOND VICE PRESIDENT—F. I. Snyder, Vice President and General Manager, B. & L. E. R. R.

TREASURER—E. J. Searles, Manager, Schaefer Equipment Company.

SECRETARY—J. D. Conway.

EXECUTIVE COMMITTEE—Frank J. Lanahan, Chairman; A. Stucki, Samuel Lynn, D. F. Crawford, F. G. Minnick, G. W. Wildin, E. J. Devans, W. S. McAbee, E. W. Smith.

SUBJECT COMMITTEE*—C. O. Dambach, Chairman, 3 years; Karl Berg, 1 year; S. G. Down, 2 years.

RECEPTION COMMITTEE*—C. J. Nieman, Chairman; A. B. White, 1 year; R. H. Flinn, Col. H. C. Nutt, 2 years; F. H. Freshwater, W. P. Buffington, 3 years.

ENTERTAINMENT COMMITTEE*—F. M. Brown, Chairman, 1 year; A. B. Severn, Joseph H. Kummer, 3 years.

FINANCE COMMITTEE*—Lloyd Sutherland, Chairman, 2 years; Charles Orchard, John B. Wright, R. P. Forsberg, Harry W. Lehr, 3 years.

MEMBERSHIP COMMITTEE*—T. E. Cannon, Chairman, Guy M. Gray, C. E. Peiffer, J. S. Lanahan, 1 year; E. Emery, R. M. Long, Donald O. Moore, 2 years; F. L. Dobson, J. L. O'Toole, A. F. Coulter, 3 years.

PRESIDENT:—Gentlemen, the men whom you have elected to the various offices hardly need to stand up and be introduced to you. I would like, however, to ask Mr. Endsley, the President elect, if he will rise to his feet and say a word or two.

PROF. L. E. ENDSLEY: I want to thank all you men for voting me this distinguished honor. And with the help of all you fellows next year, we will have another good year. That is all I have to say.

PRESIDENT: Mr. Hughes, I wonder if we can have a few words from you?

MR. J. E. HUGHES: Mr. President and Gentlemen:—I appreciate the position you have placed me in, and in the absence of the President I will try to keep up his good work to the best of my ability.

PRESIDENT: I wonder if Mr. F. I. Snyder would say a word.

* In addition to newly elected committee members, the above list also gives names of those previously elected whose terms of office have not yet expired.

MR. F. I. SNYDER: I appreciate the compliment you have paid me and I will try to measure up to the duties of the office.

PRESIDENT: Mr. Searles?

MR. E. J. SEARLES: I appreciate very highly the compliment and the honor of a re-election.

PRESIDENT: I think at this time it would be apropos to introduce our new Secretary, Mr. J. D. Conway.

MR. J. D. CONWAY: I am a little bit surprised at the introduction of our President designating me as the new Secretary. It takes me back over about thirty years of my life. It has always been a great pleasure to be associated with you as one of the working units of this wonderful organization. It takes me back to October of 1901, when this Club was originally organized. It is a matter of very great pride that we have with us tonight one of the gentlemen who were the founders of this Club, Mr. D. F. Crawford. Mr. J. H. McConnell, then of the American Locomotive Works in Allegheny, Mr. L. H. Turner, Master Mechanic and later Superintendent of Motive Power of the Pittsburgh & Lake Erie Railroad, and J. D. McIlwain, who sold belts in our city, constituted the four gentlemen who put their heads together and evolved this Club. It has had its trials and tribulations from that small beginning to its present success, but we prefer to remember only the pleasant things.

We have heard in our financial report something that should make us feel good, in that we are not over \$150 short of the net balance in the treasury in a year that has of necessity been much more difficult than many in our experience. Our membership has not been lowered, but, on the contrary, has increased. So we have nothing to apologize for.

There is so much that comes to my mind, but you are waiting for a splendid program and I would be only killing time if I were to continue. How about a little music?

PRESIDENT: Before we start on the program of entertainment, I will ask Mr. Lanahan, who is Chairman of our Executive Committee, to say a few words. He is our most ardent worker, and it is not necessary to introduce him to this assemblage.

MR. FRANK J. LANAHAN: Mr. President and Fellow Members, to introduce a sorrowful tone into the midst of this gayety seems rather incongruous, but my thesis tonight is just a

little different from that on which I usually address you. It seems as though there has been just one string to my harp and just one note to my score of music, and that is The Railway Club—its worth, its importance, and the invitation that is ever extended to our friends to join us in the splendid work it is doing. Mr. Conway, however, covered that well tonight, and I congratulate the officers of the Club, and especially you, Mr. Smith, for the very splendid showing the organization has made during these depressed times. I think we can congratulate ourselves on the success of your leadership. But that is not my theme tonight, it has rather to do with something I might introduce by quoting a few lines from a favorite poem of mine:

“Life is a book in volumes three,
The Past, the present, and the Yet-to-be.
The first is finished and laid away,
The second we’re using, day by day.
The third and last of the volumes three
Is closed to vision, God keeping the key.
But old friends and old scenes will more beauteous be
If more of goodness in each we see.”

So tonight we turn another page in our history; we start a fresh leaf at this meeting with a new administration; we bid adieu to the friend who has occupied this chair, and say to him, “God speed.” The reins are taken up by another, and delighted was I to hear that splendid gentleman make the remark, in the response to his election, in those modest words, “with the help of you fellows, we will have another good year.” That is as it should be.

This organization of ours is very democratic. We claim no “high-brows”, no distinction of class or position. There is no need to understand the Einstein theory or higher mathematics, or even cube root, or the theory of tensile strength and reduction of area, to be identified with this organization. We are just common, ordinary folks, and as such as meet in this place nine times a year, and we are presided over by the man of our choice. From our ranks we select him to guide our destinies.

The gentleman who during the past year has presided over the activities of the Railway Club as its President, has done it with dignity, with efficiency, and with a kindly courtesy. We are sorry to see him go. It has been a time honored custom of this organization to present to the retiring President some visible token

of the appreciation and the esteem that he has earned by duty well done. To me has been assigned that pleasant task tonight. The Committee in charge of this courtesy has selected something that they thought would be appropriate to our retiring President. If Mr. Conway will be kind enough to remove the covering of the object we have here, I think you will all be highly pleased with what has been selected by your Committee, for Mr. Smith.

(The removal of the coverings disclosed a very beautiful and elaborately finished and furnished Grandfather's clock).

We think that is a rather majestic time piece. Within its case is a set of cathedral chimes, which you may hear if you will listen. (Westminster chimes resound throughout the room). Mr. Smith as the echo of that chime of sweet bells dies away, so dies your administration, but you may well be assured that the memory of the work you have done will never die in the hearts of the members of this Club. We all trust that with each tick of the pendulum it will have a counterpart in you of vitality and strength, and as the hands move around over the face, they will bring you joy and happiness in the assurance that you have earned the respect, the affection and the best wishes of the entire membership.

PRESIDENT: Mr. Lanahan and Gentlemen: I am overcome with your courtesy, and it is rather difficult for me to stand up and make any reply that would be adequate to express my feelings. But though this clock is a wonderful thing, which I shall proudly cherish as long as I live, the thing which I appreciate most of all is the support you have given us all through this year. And in retiring, I wish to thank you, most sincerely.

SECRETARY: Gentlemen, the Chairman of the Entertainment Committee, Mr. Charles Orchard, has delegated the work of that Committee tonight to a pinch hitter, Mr. J. W. Hoover, of the Carnegie Steel Company, who has taken an active part in preparing the entertainment for this occasion. The officers of the Club will now kindly vacate the stage in favor of the Entertainment Committee, under whose supervision the following program of entertainment was provided:

Martha Eaton Brickman	Soloist
Joseph Gould	Humorist
Eleanor Savage	Entertainment Bureau—Mary Ann, Betty Benson
and Loma Yates	Song and Dance Artists

Music..... Danny Nirella Orchestra
Pinkney Film Service.....Two-reel Comic Pictures

The above entertainment was heartily approved by those in attendance.

J. D .CONWAY, Secretary.

CONSTITUTION

ARTICLE I

The name of this organization shall be "THE RAILWAY CLUB OF PITTSBURGH."

ARTICLE II

OBJECTS

The objects of this Club shall be mutual intercourse for the acquirement of knowledge, by reports and discussion, for the improvement of railway operation, construction, maintenance and equipment, and to bring into closer relationship men employed in railway work and kindred interests.

ARTICLE III

MEMBERSHIP

SECTION 1. The membership of this Club shall consist of persons interested in any department of railway service or kindred interests, or persons recommended by the Executive Committee upon the payment of the annual dues for the current year.

SEC. 2. Persons may become honorary members of this Club by a unanimous vote of all members present at any of its regular meetings, and shall be entitled to all the privileges of membership and not be subject to the payment of dues or assessments.

ARTICLE IV

OFFICERS

The officers of this Club shall consist of a President, First Vice President, Second Vice President, Secretary, Treasurer, Finance Committee consisting of five or more members, Membership Committee consisting of seven or more members, Entertainment Committee consisting of three members, Reception Committee consisting of six or more members, Subject Committee consisting of three or more members, and an Elective Executive Committee of three or more members. The officers named shall serve a term of one year from date of their election, with the exception of the Finance, Membership, Entertainment, Reception and Subject Committees; the term of office of these committees shall be specified at the time of the Annual Election, but the term of office of the members of such committees shall not exceed three years.

ARTICLE V

DUTIES OF OFFICERS

SECTION 1. The President shall preside at all regular or special meetings of the Club and perform all duties pertaining to a presiding officer; also serve as a member of the Executive Committee.

SEC. 2. The First Vice President, in the absence of the President, will perform all the duties of that officer; the Second Vice President, in the absence of the President and First Vice President, will perform the duties of the presiding officer. The First and Second Vice President shall also serve as members of the Executive Board.

SEC. 3. The Secretary will attend all meetings of the Club or Executive Committee, keep full minutes of their proceedings, preserve the records and documents of the Club, accept and turn over all moneys received to the Treasurer at least once a month, draw cheques for all bills presented when approved by a majority of the Executive Committee present at any meetings of the Club, or Executive Committee meeting. He shall have charge of the publication of the Club Proceedings and perform other routine work pertaining to the business affairs of the Club under the direction of the Executive Committee.

SEC. 4. The Treasurer shall receipt for all moneys received from the Secretary, and deposit the same in the name of the Club within thirty days in a bank approved by the Executive Committee. All disbursements of the funds of the Club shall be by cheque signed by the Secretary and Treasurer.

SEC. 5. The Executive Committee will exercise a general supervision over the affairs of the Club and authorize all expenditures of its funds. The elective members of this Committee shall also perform the duties of an auditing committee to audit the accounts of the Club at the close of a term or at any time necessary to do so.

SEC. 6. The Finance Committee will have general supervision over the finances of the Club, and perform such duties as may be assigned them by the President or First and Second Vice Presidents.

SEC. 7. The Membership Committee will perform such duties as may be assigned them by the President or First and Second Vice Presidents and such other duties as may be proper for such a committee.

SEC. 8. The Entertainment Committee will perform such duties as may be assigned them by the President or First and Second Vice Presidents, and such other duties as may be proper for such a committee.

ARTICLE VI

ELECTION OF OFFICERS

SECTION 1. The officers shall be elected at the regular annual meeting as follows, except as otherwise provided for:

SEC. 2. Printed forms will be mailed to all the members of the Club, not less than twenty days previous to the annual meeting, by the elective members of the Executive Committee. These forms shall provide a method, so that each member may express his choice for the several offices to be filled.

SEC. 3. The elective members of the Executive Committee will present to the President the names of the members receiving the highest number of votes for each office, together with the number of votes received.

SEC. 4. The President will announce the result of the ballot and declare the election.

SEC. 5. Should two or more members receive the same number of votes, it shall be decided by a vote of the members present, by ballot.

ARTICLE VII

AMENDMENTS

Amendments may be made to this Constitution by written request of ten members, presented at a regular meeting and decided by a two-thirds vote of the members present at the next regular meeting.

BY - LAWS

ARTICLE I

MEETINGS

SECTION 1. The regular meetings of the Club shall be held at Pittsburgh, Pa., on the fourth Thursday of each month, except June, July and August, at 8 o'clock P. M.

SEC. 2. The annual meeting shall be held on the fourth Thursday of October each year.

SEC. 3. The President may, at such times as he deems expedient, or upon request of a quorum, call special meetings.

ARTICLE II

QUORUM

At any regular or special meeting nine members shall constitute a quorum.

ARTICLE III

DUES

SECTION 1. The annual dues of members shall be Two Dollars, payable in advance on or before the fourth Thursday of September each year.

SEC. 2. The annual subscription to the printed Proceedings of the Club shall be at the published price of One Dollar. Each member of the Club shall pay for both dues and subscription. Dues and subscription paid by members proposed at the meetings in September or October shall be credited for the following fiscal year.

SEC. 3. At the annual meeting members whose dues and subscription are unpaid shall be dropped from the roll after due notice mailed them at least thirty days previous.

SEC. 4. Members suspended for non-payment of dues shall not be reinstated until all arrearages have been paid.

ARTICLE IV

ORDER OF BUSINESS

- 1—Roll call.
- 2—Reading of the minutes.
- 3—Announcements of new members.
- 4—Reports of Committees.
- 5—Communications, notices, etc.
- 6—Unfinished business.
- 7—New business.
- 8—Recess.
- 9—Discussion of subjects presented at previous meeting.
- 10—Appointment of committees.
- 11—Election of officers.
- 12—Announcements.
- 13—Financial reports or statements.
- 14—Adjournment.

ARTICLE V

SUBJECTS—PUBLICATIONS

SECTION 1. The Subject Committee will provide the papers or matter for discussion at each regular meeting.

SEC. 2. The Proceedings or such portion as the Executive Committee may approve shall be published (standard size, 6x9 inches) and mailed to the members of the Club or other similar clubs with which exchange is made.

ARTICLE VI

The stenographic report of the meetings will be confined to resolutions, motions and discussions of papers unless otherwise directed by the presiding officer.

ARTICLE VII

AMENDMENTS

These By-Laws may be amended by written request of ten members, presented at a regular meeting, and a two-thirds vote of the members present at the next meeting.

MEMBERS

Abbott, J. A.,
Trainmaster,
Western Maryland Ry.,
227 Saratoga St.,
Cumberland, Md.

Abraham, Walter S.,
Asst. Foreman,
Westinghouse Air Brake
319 Santos St.,
Company,
E. McKeesport, Pa.

Acheson, Walter C.,
Train Dispatcher,
A. & S. R. R. Co.,
Glenwillard, Pa.

Adams, E. R.,
Supervisor,
Air Reduction Sales Co.,
127½ Noblestown Road,
Carnegie, Pa.

Adams, Lewis,
Clerk, P. S. C. Co.,
McKees Rocks, Pa.

Adams, Walter A.,
Lubrication Inspector,
P. & L. E. R. R.,
230 Ohio Ave.,
Glassport, Pa.

Adler, Abe C.,
Clerk,
Union Railroad Co.,
Linden Ave.,
East Pittsburgh, Pa.

Ainsworth, J. H.,
Director of Railroad Sales
A. M. Byers Co.,
Clark Building,
Pittsburgh, Pa.

Allan, W. J.,
Sec. and Treas., Commissary
Co. of America,
1665 New Haven Ave.,
South Hills Branch,
Pittsburgh, Pa.

Allderdice, Norman,
President & Treasurer,
Arch Machinery Co., Inc.,
1001 Park Bldg.,
Pittsburgh, Pa.

Allen, E. J.,
Salesman, Ingersoll-Rand
Co., 706 Chamber of
Commerce Bldg.,
Pittsburgh, Pa.

Allen, Harvey,
Mechanical Engineer,
347 Columbia Ave.,
West View,
Pittsburgh, Pa.

Allen, James P.,
1143 Shady Ave.,
Pittsburgh, Pa.

Allison, John,
Sales Engineer,
Pgh. Steel Foundry Corp.,
Glassport, Pa.

Altsman, W. H.,
Mechanical Engineer,
Harmony Railways,
67 Watsonia Blvd.,
N. S., Pittsburgh, Pa.

Ambrose, W. F.,
M. M., Aliquippa & So. R. R.,
1301 Meadow St.,
Aliquippa, Pa.

Anderson, G. S.,
Foreman,
Penna. System,
Box 19, Penna. Station,
Pittsburgh, Pa.

Anger, C. E.,
Upholsterer Foreman,
P. & L. E. R. R.,
15 Richey Ave.,
N. S., Pittsburgh, Pa.

Anger, John G.,
General Foreman,
P. & L. E. R. R.,
Fifth Ave.,
Coraopolis, Pa.

Anne, George E.,
Representative,
American Brake Shoe &
Foundry Co.,
1101 Fourteenth Ave.,
Altoona, Pa.

- Antes, Edwin L.,
General Foreman,
Pressed Steel Car Co.,
11 Frazier Ave.,
McKees Rocks, Pa.
- Anthony, R. H.,
Freight Claim Agent,
P. & L. E. R. R.,
424 Terminal Bldg.,
Pittsburgh, Pa.
- Arensberg, F. L.,
President,
Vesuvius Crucible Co.,
Box 47,
Swissvale, Pa.
- Armstrong, J. B.,
Sales Manager,
Monongahela Iron & Steel
Company,
2208 First Nat Bank
Bld.,
Pittsburgh, Pa
- Armstrong, M. H.,
Asst. Yardmaster,
Mon. Con. R. R. Co.,
250 Freeport Ave.,
Mt. Oliver Station,
Pittsburgh, Pa.
- Arnold, J. J.,
Sales Dept.,
Pressed Steel Car Co.,
1915 Farmers Bank Bldg.,
Pittsburgh, Pa.
- Ashley, F. B.,
Vice President,
Pruett Schaffer Chemical Co.,
Tabor St.,
Corliss Sta.,
Pittsburgh, Pa.
- Ashton, Wm. A.,
Die Foreman,
Schoen Works,
Carnegie Steel Co.,
1031 Tyndall St.,
Sheraden, Pa
- Askin, James A.,
Purchasing Agent,
Fort Pitt Malleable Iron Co.
438 Russellwood Ave.,
Pittsburgh, Pa.
- Atterbury, W. W.,
President, P. R. R. Co.,
Broad St. Sta.,
Philadelphia, Pa
- Aulbach, A. J.,
Yardmaster, P. & L. E. R. R.,
318 Quincey Ave.,
Mt. Oliver Sta.,
Pittsburgh, Pa.
- Averman, E. J.,
Vice Pres. and Treas.,
General Bronze Co.,
822 Chislett St.,
Pittsburgh, Pa.
- Ayers, H. B.,
President,
H. K. Porter Co.,
49th St. and A. V. Ry.,
Pittsburgh, Pa.
- Babcock, F. H.,
Safety Agent,
P. & L. E. R. R.,
415 House Bldg.,
Pittsburgh, Pa.
- Bachner, Martin G.,
P. W. I.—P. & L. E. R. R.,
1109 Church Ave.,
McKees Rocks, Pa
- Baer, Harry L.,
Pres. Water Treatment Co. of
America,
2716 Grant Bldg.,
Pittsburgh, Pa.
- Bagent, H. C.,
Asst. R. F. of E.,
Pennsylvania Railroad,
219 Second St.,
Monongahela, Pa
- Bailey, F. G.,
Mechanical Engineer,
Standard Steel Car Corp'n.,
P. O. Box 839,
Butler, Pa.
- Baily, J. H.,
Secy., Edgewater Steel Co.,
Oakmont, Pa
- Bain, C. A.,
Inspector,
Pressed Steel Car Co.,
801 Eighth St.,
W. P., McKees Rocks, Pa
- Bain, Geo. F.,
Representative,
Copperweld Steel Co.,
117 Liberty St.,
New York, N. Y

- Bair, J. K.,
Locomotive Engineer,
Union Railroad,
139 Brown Ave.,
Turtle Creek, Pa
- Baird, F. C.,
General Manager,
P. & W. Va. Ry.,
Wabash Building,
Pittsburgh, Pa
- Baker, J. B.,
Chief Engr., M. of W.,
Pennsylvania Railroad,
Pennsylvania Station,
Pittsburgh, Pa
- Bakewell, Donald C.,
President, Duquesne Steel
Foundry Co.,
Union Bank Bldg.,
Pittsburgh, Pa.
- Bald, E. J.,
General Foreman,
Westinghouse E. & M. Co.,
2105 Lloyd Ave.,
Swissvale, Pa.
- Ball, Fred M.,
District Manager,
Franklin Ry. Sup. Co., Inc.
Broad St. Station Bldg.
Philadelphia, Pa
- Ball, George L.,
Treasurer,
Ball Chemical Co.,
230 S. Fairmont Ave.,
Pittsburgh, Pa
- Balzer, C. E.,
Asst. Air Brake Supervisor,
P. & L. E. R. R.,
3133 West Carson St.,
Pittsburgh, Pa.
- Bandi, E. John,
Bill Clerk, P. C. & Y. R. R.,
1115 Criss St.,
Pittsburgh, Pa
- Bandish, Jos. M.,
District Manager,
Durametallic Corporation,
35 E. Wacker Drive,
Chicago, Ill.
- Barclay, J. R.,
Cost Engineer,
P. & L. E. R. R.,
4 Oakwood Road,
Crafton, Pittsburgh, Pa
- Barnett, Geo.,
Salesman,
W. W. Lawrence Co.,
West Carson St.,
Pittsburgh, Pa
- Barney, Harry,
President-Treasurer,
Barney Machinery Co., Inc.,
2410 Koppers Bldg.,
Pittsburgh, Pa
- Barnhart, F. L.,
Secretary,
Union Collieries Co.,
2212 Oliver Bldg.,
Pittsburgh, Pa
- Barr, H. C.,
Agent, P. & L. E. R. R.,
3134 West Liberty Ave.
So. Hills Station,
Pittsburgh, Pa
- Bartholomew, W. S.,
Alder Court Apts.,
East End, Pittsburgh, Pa
- Batchelar, E. C.,
Manager, The Motch &
Merryweather Mach'y Co.,
1315 Clark Bldg.,
Pittsburgh, Pa
- Bateman, W. H. S.,
W. H. S. Bateman & Co.,
Suite 1281,
Broad St. Station Bldg.
Philadelphia, Pa
- Bayer, George J.,
American Rolling Mill Co.,
112 Cross St.,
Butler, Pa.
- Beam, E. J.,
Car Builder, Penna. System,
577 Fourth St.,
Pitcairn, Pa.
- Beattie, J. A.,
1090 Shady Ave.,
Pittsburgh, Pa
- Beatty, George W.,
P. W. I.—P. & L. E. R. R.,
Dickerson Run, Pa.
- Beck, Carl H.,
General Sales Manager,
Westinghouse Air Brake Co.,
Wilmerding, Pa.

- Beegel, F. W.,
Locust St.,
Etna, Pa.
- Beers, W. E.,
Sheet Metal Worker,
P. & L. E. R. R.,
P. O. Box No. 8,
Dawson, Pa.
- Beeson, H. L.,
Mechanical Inspector,
Monongahela Ry. Co.,
202 Riverview Terrace,
West Brownsville, Pa.
- Beitzel, H. L.,
C. C. to Traffic Manager,
P. & L. E. R. R.,
1328 Rutherford Ave.,
Pittsburgh, Pa.
- Bell, D. H.,
Engineer of Equipment,
Pittsburgh Railways Co.,
Homewood Shops,
Pittsburgh, Pa.
- Beltz, John D.,
Supt., B. & O. R. R.,
So. Windsor Apts.,
Connellsville, Pa.
- Bennett, Alonzo H.,
General Foreman,
B. R. & P. Ry.,
520 S. State St.,
Du Bois, Pa.
- Benson, G. W.,
C. C. to Div. Engineer,
B. R. & P. Ry.,
413 W. Du Bois Ave.,
Du Bois, Pa.
- Berg, Karl,
Supt. Motive Power,
P. & L. E. R. R.,
6319 Morrowfield Ave.,
Pittsburgh, Pa.
- Berghane, A. L.,
Mechanical Expert,
Westinghouse Air Brake Co.,
Wilmerding, Pa.
- Bernoulli, W. H.,
Pugh Bros.,
211 House Bldg.,
Pittsburgh, Pa.
- Best, D. A.,
Chief Test Engineer,
Westinghouse Airbrake Co.,
Wilmerding, Pa.
- Bevan, P. A.,
Asst. Works Manager,
Westinghouse Air Brake Co.,
Wilmerding, Pa.
- Bier, Edward C.,
Yardmaster,
Mon. Con. R. R.,
117 Duffland Ave.,
Mt. Oliver, Pittsburgh, Pa.
- Bigleman, E. P.,
Yard Master,
P. & W. Va. Ry.,
Gornley Ave.,
Carnegie, Pa.
- Bihler, L. C.,
Asst. to Pres. and General
Traffic Manager,
Carnegie Steel Co.,
Carnegie Bldg.,
Pittsburgh, Pa.
- Binkley, Frank H.,
Yard Foreman,
Union Railroad,
P. O. Box 262,
Unity, Pa.
- Binkley, Walter E.,
Asst. Car Foreman,
Union Railroad Co.,
No. 131 Unity, Pa.
- Binney, Charles A.,
Service Engineer,
Standard Stoker Co., Inc.,
338 Charles St.,
Hornell, N. Y.
- Bishop, C. L.,
Chief Clerk,
Pittsburgh, Mahoning and
Shenango Valley Freight
Committee,
606 Chamber of
Commerce Bldg.,
Pittsburgh, Pa.
- Bittner, George,
Asst. Engine House Fore.,
Penna. R. R.,
56 Maplewood St.,
Etna, Pa.

- Blackmore, G. A.,
President & General Mgr.
Union Switch & Signal Co.
Swissvale, Pa
- Blair, John R.,
Asst. General Mgr. of Sales,
Pittsburgh Steel Products
Company,
Union Trust Bldg.,
Pittsburgh, Pa.
- Blest, Minot C.,
Chief Engineer,
Pressed Steel Car Co.,
Farmers Bank Bldg.,
Pittsburgh, Pa
- Blumling, H. J.,
Fitter,
Pressed Steel Car Co.,
510 Russellwood Ave.,
W. P., McKees Rocks, Pa.
- Blumling, Wm. G.,
Sub-Foreman,
Pressed Steel Car Co.,
510 Russellwood Ave.,
McKees Rocks, Pa.
- Boate, H. S.,
Piece Work Inspector,
P. & L. E. R. R.,
438 Russelwood Ave.,
McKees Rocks, Pa.
- Bond, W. W.,
Asst. R. F. of E.,
Pennsylvania R. R.,
3744 Mississippi St.,
San Diego, Calif.
- Bonhoff, E. L.,
Gen. Fore. Penna. Railroad,
626 Hastings St.,
E. E., Pittsburgh, Pa
- Booth, J. K.,
Master Mechanic,
B. & L. E. R. R.,
No. 8 Penn Ave.,
Greenville, Pa.
- Borchers, E. A.,
Office Engineer, Bridge Dept.,
Pennsylvania R. R.,
500 Peebles St.,
Pittsburgh, Pa
- Borg, John Edw.,
Chief Draftsman,
Julian Kennedy,
232 Martsolf Ave.,
West View, Pa.
- Bottomly, E. S.,
Chief Joint Inspector,
P. R. R., B. & O.,
Rdg., and W. M.,
Martinsburg, W. Va.
- Bourke, John P.,
Vice President,
Ewald Iron Co.,
501 Fifth Ave.,
New York, N. Y.
- Bowden, Foster S.,
Asst. Supervisor,
Pennsylvania Railroad,
717 North Main St.,
Urichsville, Ohio.
- Bowden, T. C.,
Coal Inspector,
B. & L. E. R. R.,
97 S. Mercer St.,
Greenville, Pa.
- Bowen, James T.,
Car Foreman,
Union Railroad,
Box 163,
Unity, Pa.
- Bowers, John M.,
Clerk,
Union Railroad,
1203 Swissvale, Ave.,
Wilkinsburg, Pa.
- Bowery, Frank J.,
Chief Estimator, F. C. D.,
P. S. C. Co.,
214 Birmingham Ave.,
Avalon, Pa.
- Bowler, R. W. E.,
Division Engineer,
P. R. R. System,
207 Pennsylvania Sta.,
Pittsburgh, Pa
- Boylan, P. F.,
Expediter,
Pressed Steel Car Co.,
1314 Orchlee St.,
N. S., Pittsburgh, Pa.
- Boyle, Edward A.,
Salesman, The Okonite Co.,
First National Bank Bldg.,
Pittsburgh, Pa

- Braden, Lou,
District Sales Manager,
Wyoming Shovel Works,
First Natl. Bank Bldg.,
Pittsburgh, Pa.
- Bradley, W. C.,
C. C. to Gen'l. Supt.,
Union R. R.,
1808 Lafayette St.,
Swissvale, Pa.
- Brady, H. K.,
Supt., Labor & Wage Bureau
Penna. System,
720 Penna. Station,
Pittsburgh, Pa.
- Brady, T. Joseph,
President,
Vanderbilt Coal & Coke Co.,
303 Kearsarge St.,
Mt. Washington Sta.,
Pittsburgh, Pa.
- Brant, Wm. J.,
1001 Bessemer Bldg.,
Pittsburgh, Pa.
- Braun, Otto F.,
Gen. Mach Shop Foreman
P. & L. E. R. R.,
R. D. 1—Herbst Road,
Coraopolis, Pa.
- Brendlinger, M. T.,
Shop Inspector,
Penna. R. R. System,
444 Third St.,
Pittsairn, Pa.
- Brennan, John T.,
Asst. Vice Pres.,
Greenville Steel Car Co.,
Greenville, Pa.
- Brennan, T. F.,
Vice President,
B. R. & P. Ry. Co.,
155 Main St., West,
Rochester, N. Y.
- Brewer, H. W.,
Supt. of Shops,
B. R. & P. Ry.,
Du Bois, Pa.
- Brice, James A.,
Chief Train Disp's.,
P. & L. E. R. R.,
411 Cohasset Road,
Youngstown, Ohio.
- Brinkhoff, W. H.,
Draftsman, P. & L. E.
R. R., 13 Willow St.,
Emsworth, Pa.
- Brogan, J. E.,
Passenger Conductor,
B. R. & P. Ry.,
397 E. Utica St.,
Buffalo, N. Y.
- Brower, J. E.,
Master Mech., Penna. System,
2130 N. Anthony Blvd.,
Ft. Wayne, Ind.
- Brown, C. C.,
Rep., Dearborn Chemical Co.,
618 Farmers Bank Bldg.,
Pittsburgh, Pa.
- Brown, Charles L.,
Foreman, R. R. Dept.,
Westinghouse Airbrake Co.,
666 Airbrake Ave.,
Wilmerding, Pa.
- Brown, E. C.,
Chief Civil Engineer,
Carnegie Steel Co.,
Room 1012,
Carnegie Building,
Pittsburgh, Pa.
- Brown, F. A.,
Chief Clerk, Freight Claim
Office, P. & L. E. R. R.,
87 South Sixteenth St.,
Pittsburgh, Pa.
- Brown, F. M.,
Supt., P. & L. E. R. R. Co.,
Pittsburgh, Pa.
- Brown, J. Alexander,
424 W. 33rd St.,
Eleventh Floor,
New York, N. Y.
- Brown, John T., Jr.,
Supt., Federated Metal Corp.,
6667 Woodwell St.,
Pittsburgh, Pa.
- Brown, W. E.,
Asst. Chf. Engr., M. of W.,
Penna. System,
1114 Penna. Station,
Pittsburgh, Pa.

- Browne, Bard,
Asst. to Vice President,
The Superheater Co.,
60 East 42nd St.,
New York, N. Y.
- Bruce, S. S.,
Traffic Manager,
The Koppers Co.,
Koppers Bldg.,
Pittsburgh, Pa.
- Brucekner, Anthony J.,
Gang Foreman,
Penna. Railroad System,
1610 Lowrie Street,
Pittsburgh, Pa.
- Buckbee, W. A.,
The Superheater Co.,
Nyack, N. Y.
- Buell, D. C.,
Director, The R'wy Educa-
tional Bureau,
1809 Capitol Ave.,
Omaha, Neb.
- Buffington, W. P.,
Traffic Mgr.,
Pittsburgh Coal Co.,
P. O. Box 64,
Pittsburgh, Pa.
- Bull, R. S.,
Supt. of Equipment,
Pittsburgh Railways Co.,
435 Sixth Ave.,
Pittsburgh, Pa.
- Burel, W. C.,
Master Mechanic,
Western Allegheny R. R.,
Kaylor, Pa.
- Burgham, Maurice L.,
Sales Engineer,
Edgewater Steel Co.,
440 Freeport St.,
Parnassus, Pa.
- Burnes, J. E.,
Supt. Car Service,
B. R. & P. Ry. Co.,
133 Warwick Ave.,
Rochester, N. Y.
- Burnett, John A.,
Pipe Fitter,
P. & L. E. R. R.,
139 Clairhaven St.,
Craifton Heights,
Pittsburgh, Pa.
- Burnette, G. H.,
Chief Engineer,
Monongahela Railway Co.,
Brownsville, Pa.
- Burns, E. A.,
District Claim Agent,
B. R. & P. Ry.,
20 E. Long Ave.,
DuBois, Pa.
- Button, D. G.,
Yardmaster,
P. & L. E. R. R.,
Dickerson Run, Pa.
- Byers, Q. S.,
Asst. E. H. Foreman,
P. R. R. System,
1683 Morningside Ave.,
Pittsburgh, Pa.
- Byrne, William L.,
Sales Engineer,
Royal Railway Supply Co.,
House Bldg.,
Pittsburgh, Pa.
- Byrom, W. Reed,
Material Inspector,
Pressed Steel Car Co.,
202 Wright St.,
McKees Rocks, Pa.
- Cady, P. C.,
Railway Supplies,
30 Church St., Room 506,
New York City
- Caldwell, C. W.,
Rep., James B. Sipe & Co.,
Chamber of Commerce Bldg.,
Pittsburgh, Pa.
- Callahan, F. J.,
Engine House Foreman,
Montour Railroad,
1214 Third St.,
West Park,
McKees Rocks, Pa.
- Callahan, Lawrence H.,
Yardmaster, P. & L. E. R. R.,
600 Monongahela Ave.,
McKeesport, Pa.
- Calvert, H. W.,
General Foreman,
P. & L. E. R. R.,
518 West Cherry St.,
New Castle, Pa.

- Campbell, C. A.,
Agent, B. R. & P. Ry.,
509 E. Moody Ave.,
New Castle, Pa.
- Campbell, Edward D.,
Gen. Fr't. Agt.,
B. & L. E. R. R.,
P. O. Box 456,
Pittsburgh, Pa.
- Campbell, Harry V.,
Electrician,
Union Railroad Co.,
573 Texas Ave.,
Duquesne, Pa.
- Campbell, James E.,
Agent, P. & L. E. R. R.,
512 Twelfth Avenue,
Munhall, Pa.
- Campbell, J. T.,
Agent,
B. & O. R. R. Co.,
Thirty-third St.,
Pittsburgh, Pa.
- Campbell, W. T.,
Paymaster,
Montour Railroad,
1711 State Ave.,
Coraopolis, Pa.
- Cannon, J.,
Vice Pres. & Gen. Mgr.,
Missouri Pacific R. R. Co.,
St. Louis, Mo.
- Cannon, T. E.,
Gen. Supt., Locos. &
Equipment,
P. & W. Va. Ry.,
Wabash Bldg.,
Pittsburgh, Pa.
- Canterbury, L. E.,
Telegraph Operator,
P. & L. E. R. R.,
P. O. Box 86,
Newell, Pa.
- Cardwell, J. R.,
President,
Cardwell Westinghouse Co.,
332 S. Michigan Ave.,
Chicago, Ill.
- Carlson, Frank R.,
Sales Dept., Chicago Rwy.,
Equipment Co.,
1557 Rwy. Exch. Bldg.,
Chicago, Ill.
- Carlson, Lawrence E.,
Westinghouse Air Brake Co.,
353 Marguerite Ave.,
Wilmerding, Pa.
- Carmack, John L.,
Crane & Shovel Foreman,
Union Railroad,
111 Comrie Ave.,
Braddock, Pa.
- Carnahan, W. E.,
Treas., Nat. Casket Co., Inc.,
2216 Oliver Bldg.,
Pittsburgh, Pa.
- Carr, T. W.,
Mechanical Engineer,
P. & L. E. R. R.,
Smithfield St.,
Pittsburgh, Pa.
- Carroll, J. H., Jr.,
Freight Traffic Manager,
B. & O. R. R.,
921 Oliver Bldg.,
Pittsburgh, Pa.
- Carson, G. E.,
"Retired" M. C. B.,
N. Y. C. R. R. Co.,
715 Western Ave.,
Albany, N. Y.
- Carson, John,
Supt. Equip't., Ft. Pitt
Malleable Iron Co.,
1705 Morningside Ave.,
Pittsburgh, Pa.
- Carter, William,
Purchasing Agent,
Rees Manufacturing Corp.,
7501 Thomas Blvd.,
Pittsburgh, Pa.
- Carthew, John W.,
Engineer of Inspection,
Westinghouse Air Brake,
241 Welsh Ave.,
Wilmerding, Pa.
- Cartwright, Wm. E.,
Pgh. District Mgr.,
National Bearing Metals
Corp.,
P. O. Box 1078,
N. S., Pittsburgh, Pa.
- Cassidy, David A.,
General Foreman,
P. & W. Va. Ry.,
Central Hotel,
Carnegie, Pa.

- Cathers, C. E.,
Commercial Freight Agent,
B. R. & P. Ry.,
529 Smithfield St.,
Pittsburgh, Pa.
- Chaffin, H. B.,
M. M.,
Pennsylvania Railroad,
711 Lexington Ave.,
Altoona, Pa.
- Chalker, A. R.,
Mechanical Engineer,
William K. Steamets,
473 Dawson Ave.,
Bellevue, Pa.
- Champion, James H.,
Athletic Director,
Pennsylvania Railroad,
Blawnox, Pa.
- Cherry, Jas. T.,
Roadmaster,
P. & W. Va., Ry.,
626 Grandview Ave.,
Carnegie, Pa.
- Chilecoat, H. E.,
Manager of Sales,
Air Dump Car Division,
Koppel Industrial Car &
Equipment Co.,
Koppel, Pa.
- Chittenden, A. D.,
Supt. Transportation,
B. & L. E. R. R.,
P. O. Box 456,
Pittsburgh, Pa.
- Christfield, J. G.,
Mechanical Engineer,
American Rolling Mill Co.,
Butler, Pa.
- Christianson, A.,
Chief Engineer,
Standard Steel Car Co.,
Butler, Pa.
- Christy, F. X.,
Inspector,
P. R. R.,
4121 Davison St.,
Arsenal Sta.,
Pittsburgh, Pa.
- Church, C. R.,
M. M., Union R. R.,
319 Larimer Ave.,
Turtle Creek, Pa.
- Cipro, Thomas,
Air Brake Foreman,
Union Railroad Co.,
Box 204,
Unity, Pa.
- Clark, C. C.,
Gen. Sales Agent,
Central Dist.,
Pressed Steel Car Co.,
P. O. Box 53,
Pittsburgh, Pa.
- Clark, Chas. H.,
Pres., Clark Car Co.,
Hanna Bldg.,
Cleveland, Ohio
- Clark, Edward J.,
Spt. Electric Construction,
Byllesby Engr. & Man. Corp.,
2927 Mattern Ave.,
Dormont,
Pittsburgh, Pa.
- Clement, M. W.,
Vice Pres.-Operation,
Penna System
Broad Street Station,
Philadelphia, Pa.
- Clements, B. A.,
President,
American Arch Co., Inc.,
60 E. 42nd Street,
New York City, N. Y.
- Clements, Frank C.,
Foreman, P. & L. E. R. R.,
844 Island Avenue,
McKees Rocks, Pa.
- Clunan, Patrick F.,
Chief Waybill Clerk,
P. & L. E. R. R.,
1101 Grandview Ave.,
Mt. Washington Sta.,
Pittsburgh, Pa.
- Coates, W. T.,
Inspector,
Westinghouse Air Brake Co.,
328 James Street,
Turtle Creek, Pa.
- Cobb, Candler,
Vice President,
O. C. Durvea Corp'n.,
230 Park Ave.,
New York, N. Y.

- Code, C. J.,
Division Engineer,
Penna. Railroad,
206 Dickinson Ave.,
Swarthmore, Pa.
- Code, J. G.,
Vice Pres. and Gen. Mgr.,
Jefferson-S'western R. R. Co.,
Mt. Vernon, Ill.
- Coffin, C. W. Floyd,
Vice President,
Franklin Railway Supply
Co., Inc.,
60 E. 42nd St.,
New York, N. Y.
- Coffin, Joel S.,
Chairman, Franklin Ry.
Supply Co.,
60 E. 42nd St.,
New York, N. Y.
- Cohen, Alfred J.,
Westinghouse Air Brake Co.,
816 Ivy St.,
Pittsburgh, Pa.
- Colbert, J. T.,
General Superintendent,
Pittsburgh & Shawmut
Railroad,
Kittanning, Pa.
- Cole, Raymond L.,
Ass't. Foreman,
Pullman Co.,
2152 Walton Ave.,
Overbrook,
Pittsburgh, Pa.
- Coleman, Jacob C.,
Clerk, Union R. R. Co.,
717 Middle St.,
Braddock, Pa.
- Coleman, L. G.,
Manager, Locomotive Dept.,
Ingersoll-Rand Co.,
11 Broadway,
New York, N. Y.
- Conlon, John F.,
Clerk, P. & L. E. R. R.,
547 Canal St.,
Beaver, Pa.
- Conner, W. P.,
P. O. Box 132,
Wilkinsburg, Pa.
- Connolly, E. V.,
Chief Clerk & Cashier,
P. & L. E. R. R.,
Rankin, Pa.
- Conway, C. E.,
Salesman,
Vulcan Crucible Steel Co.,
Aliquippa, Pa.
- Conway, J. D.,
Sec'y-Treas., Railway Supply
Manufacturer's Association,
1841 Oliver Bldg.,
Pittsburgh, Pa.
- Coombe, A. B.,
Asst. Superintendent,
Pressed Steel Car Co.,
1515 Quail Ave.,
Bellevue, Pa.
- Cooper, Sidney B.,
Mgr. Railway Engineering,
Westinghouse Elec. & Mfg
Company,
East Pittsburgh, Pa.
- Cope, E. E.,
Master Mechanic,
B. R. & P. Ry.,
101 So. Franklin St.,
DuBois, Pa.
- Copeland, T. A.,
Train Master,
P. & L. E. R. R.,
688 McKee Ave.,
Monessen, Pa.
- Copeland, Thomas T.,
Carnegie Steel Co.,
Munhall, Pa.
- Corcoran, James M.,
Inspector,
Mon. Con. R. R.,
4002 Coleman St.,
Pittsburgh, Pa.
- Cotter, George L.,
District Engineer,
Westinghouse Airbrake Co.,
353 Marguerite Ave.,
Wilmerding, Pa.
- Coulter, A. F.,
M. C. B., Union R. R. Co.,
East Pittsburgh, Pa.

Courtney, Harry,
Shop Supt., P. & L. E.,
520 Giffin Ave.,
Mt. Oliver Sta.,
Pittsburgh, Pa.

Covert, G. W., Jr.,
Safety Inspector,
Youngstown & Suburban
Ry. Co.,
21 East Front St.,
Youngstown, Ohio

Covey, H. S.,
Sec'y., The Cleveland Pneu.
Tool Co.,
3734 East 78th St.,
Cleveland, Ohio

Cox, Alfred M.,
President,
Pgh. Com'l. Heat Treat. Co.,
3710 Liberty Ave.,
Pittsburgh, Pa.

Cox, W. E.,
Asst. Supt.,
Mon. Con. R. R.,
2535 Brownsville Ave.,
Pittsburgh, Pa.

Craig, John R.,
District Manager,
Buckeye Chemical Co.,
5621 Wellesley Ave.,
E. E., Pittsburgh, Pa.

Craig, W. J.,
Dist. Boiler Inspector,
B. & O. R. R.,
403 Johnston Ave.,
Hazelwood, Pittsburgh, Pa.

Cramblitt, Thomas L.,
Supervisor,
Locomotive Operation,
B. & O. R. R.,
527 Louisiana Ave.,
Cumberland, Md.

Crary, Harry S.,
General Manager,
Fort Pitt Spring Co.,
P. O. Box 917,
Pittsburgh, Pa.

Crawford, Alvin B.,
Salesman,
Duquesne Steel
Foundry Co.,
Union Bank Bldg.,
Pittsburgh, Pa.

Crawford, D. F.,
Consulting Engineer,
5243 Ellsworth Ave.,
Pittsburgh, Pa.

Crede, Wm. A.,
Chief Train Clerk,
Office of Sup't. Transp'n.,
Penna. R. R.,
Penna. Station,
Pittsburgh, Pa.

Creighton, David M.,
Engineering Computer,
P. & L. E. R. R.,
717 Tenth Ave.,
New Brighton, Pa.

Cremmer, Jos. A.
Dist. Mgr., Dearborn
Chemical Co.,
618 Farmers Bank Bldg.,
Pittsburgh, Pa.

Crispen, Raymond B.,
Timekeeper, Union Railroad,
420 South Ave.,
Wilksburg, Pa.

Crockett, John M.,
Electrician,
P. & L. E. R. R.,
California, Pa.

Croft, C. A.
R. R. Rep., A. M. Byers Co.,
Clark Building,
Pittsburgh, Pa.

Croke, Thos. F.
Foreman,
Ft. Malleable Iron Co.,
3102 Bergman St.,
Pittsburgh, Pa.

Cromwell, H. T.,
Asst. Shop Supt.,
B. & O. R. R.,
720 Shady Ave.,
Mt. Lebanon, Pa.

Cross, Harry W.,
Works Manager,
Putnam Machine Works,
Manning Maxwell &
Moore, Inc.,
Fitchburg, Mass

- Crouse, J. M.,
Asst. Supt.,
P. & W. Va. Ry.,
Wabash Bldg.,
Pittsburgh, Pa.
- Crowe, J. M.,
Pres., Crowe Mfg. Corp.,
317 Sycamore St.,
Cincinnati, Ohio
- Cruikshank, J. C.,
Div. Engr., P. & W. Va. Ry.,
439 Wabash Bldg.,
Pittsburgh, Pa.
- Cunningham, J. L.,
Asst. to Gen. Supt. Mo Power,
Pennsylvania Railroad,
519 Penna. Station,
Pittsburgh, Pa.
- Cunningham, R. I.,
Mech. Expert., W. A. B. Co.,
606 Hampton Ave.,
Wilkinsburg, Pa.
- Cunningham, W. P.,
Supt. Motive Power,
Monongahela Railway Co.,
3169 Ashlyn Street,
Pittsburgh, Pa.
- Curly, Walter J.,
President and General Mgr.,
Conley Tank Car Co.,
Oliver Building,
Pittsburgh, Pa.
- John Currie,
Storehouse Attendant,
P. & L. E. R. R.,
43 Evans Ave.,
Ingram, Pa.
- Dailey, F. J.,
Lubrication Engineer,
Vacuum Oil Co.,
30 Clyde Ave.,
Jamestown, N. Y.
- Daley, John,
Cond'r., P. C. & Y. Ry.,
Yard Office,
McKees Rocks, Pa.
- Dalzell, W. E.,
Asst. Planner,
Pressed Steel Car Co.,
1014 Milton St.,
Coraopolis, Pa.
- Dambach, C. O.,
Supt. P. & W. Va. Ry.,
Wabash Bldg.,
Pittsburgh, Pa.
- Damore, S. A.,
Steam Ditcher Engr.,
P. & L. E. R. R.,
P. O. Box 1511,
Monessen, Pa.
- Damrau, Edward A.,
Dist. Mgr., The Okonite Co.,
First National Bank Bldg.,
Pittsburgh, Pa.
- Danforth, G. H.,
Contracting Engineer,
J. & L. Steel Co.,
3rd Ave. and Ross St.,
Pittsburgh, Pa.
- Darrall, William G.,
Draftsman,
Edgewater Steel Co.,
347 James St.,
Springdale, Pa.
- Darr, Elsworth E.,
Yardmaster,
P. & L. E. R. R.,
235 Meridan Street,
Mt. Washington,
Pittsburgh, Pa.
- Daugherty, W. A.,
Gang Fore., Car Dept.,
Union Railroad,
Box 237,
North Bessemer, Pa.
- Davern, F. C.,
Sales Engineer,
Nathan Manufacturing Co.,
123 Carmel Road,
Buffalo, N. Y.
- Davies, James,
General Auditor,
Alton & Southern R. R.,
Oliver Building,
Pittsburgh, Pa.
- Davin, W. E.,
Supervisor,
P. & L. E. R. R.,
340 Russellwood Ave.,
McKees Rocks, Pa.
- Davis, A. G.,
Superintendent,
Pittsburgh, Allegheny &
McKees Rocks R. R.,
McKees Rocks, Pa.

- Davis, Chas. S.,
Traffic Mgr.,
Standard Tin Plate Co.,
Canonsburg, Pa.
- Davis, W. B.,
Claim Agent,
B. R. & P. Ry.,
155 Main St., West,
Rochester, N. Y.
- Davison, Charles R.,
Chief Draftsman,
Standard Stoker Co.,
547 No. 10th St.,
Erie, Pa.
- Day, George W. C.,
Telegraph Censor,
B. & O. R. R.,
718 North Ave.,
Wilksburg, Pa.
- Deckman, E. J.,
Pres., E. J. Deckman Co.,
902 Oliver Bldg.,
Pittsburgh, Pa.
- Dehne, G. C.,
Asst. to Vice Pres.,
W. A. B. Co.,
Wilmerding, Pa.
- DeLancy, Grover C.,
Fore. Constr'n.,
Ally. Co. Road Dept.,
Box 124,
Glassport, Pa.
- DeLaney, V. W.,
Superintendent Transp'n.,
Youngstown Sheet & Tube
Company,
Youngstown, Ohio
- Dellmin, T. D.,
Superintendent,
Lake Erie & East. R. R. Co.,
Struthers, Ohio.
- Dempsey, P. W.,
Supt. West. Machine Shop,
Westinghouse Air Brake Co.,
269 N. Dithridge St.,
Pittsburgh, Pa.
- Dennis, J. G.,
Freight Train Master,
Pennsylvania R. R. System,
324 Pennsylvania Station,
Pittsburgh, Pa.
- Depner, Michael,
Hammersmith,
P. & L. E. R. R.,
306 Grove St.,
McKees Rocks, Pa.
- Derr, A. I.,
Asst. to V. P. & G. M.,
P. & W. Va. Ry.,
Wabash Bldg.,
Pittsburgh, Pa.
- Descamp, J.,
Car Inspector,
Union Railroad,
514 Watson St.,
Hays, Pa.
- Devans, E. J.,
Gen. Supt.,
B. R. & P. Ry.,
Du Bois, Pa.
- Dickinson, F. W.,
M. C. B.,
B. & L. E. R. R. Co.,
Race St.,
Greenville, Pa.
- DiCola, Oreste,
Welder,
Pressed Steel Car Co.,
74 Harlem Ave.,
McKees Rocks, Pa.
- Diller, Clark,
Salesman,
Gustin-Bacon Mfg. Co.,
1021 Filbert St.
Philadelphia, Pa.
- Diven, J. B.,
Supt. Motive Power,
P. R. R. System,
502 Pennsylvania Sta.,
Pittsburgh, Pa.
- Dixon, C. P.,
Asst. Train Master,
Pennsylvania Railroad,
527 Sixth St.,
Oakmont, Pa.
- Dixon, T. L.,
Foreman Mechanical Dept.
Union Railroad,
110 Shaw Ave.,
Turtle Creek, Pa.

- Doane, F. B.,
Chemical Salesman,
Pittsburgh Test'n Lab.,
Stevenson & Locust Sts.,
Pittsburgh, Pa.
- Dobson, F. L.,
Superintendent,
Pittsburgh Division,
Pennsylvania Railroad,
Pennsylvania Station,
Pittsburgh, Pa.
- Doemling, Joseph J.,
Sheet Metal Worker,
Jacob Kirsch Co.,
3465 Ligonier St.,
Pittsburgh, Pa.
- Donovan, John,
Sub-Foreman,
Pressed Steel Car Co.,
806 Frank St.,
McKees Rocks, Pa.
- Donovan, J. J.,
Gen. Fore., P. & L. E. R. R.,
426 Jones St.,
Bellevue, Pa.
- Down, S. G.,
Vice President, Westinghouse
Airbrake Co.,
Wilmerding, Pa.
- Downes, M. S.,
Asst. to Gen. Mgr., Ry Div.,
Timken Roller Bearing Co.,
Canton, Ohio
- Doyle, Timothy E.,
Foreman Painter,
Montour Railroad,
1125 First Ave.,
Coraopolis, Pa.
- Doyle, William E.,
Asst. C. C. to M. C. B.,
P. & L. E. R.R.,
912 Liberty St.,
McKees Rocks, Pa.
- Draper, Thos.,
President, Draper Mfg. Co.,
Port Huron, Mich.
- Duchene, L. P.,
Trainmasters' Clerk,
Aliquippa & Southern R. R.,
1906 Main St.,
Aliquippa, Pa.
- Dudley, Jesse C.,
Ass't. R. F. of E.,
Penna. R. R.,
603 Hill Ave.,
Wilkesburg, Pa.
- Duff, Samuel E.,
Consulting Engineer,
712 Magee Bldg.,
Pittsburgh, Pa.
- Dunbar, Harold F.,
Sales Rep., The McConway
& Torley Co.,
48th St. & A. V. R. R.,
Pittsburgh, Pa.
- Dunlap, Robert L. Jr.,
Terminal Foreman,
Montour Railroad Co.,
Willock, Pa.
- Dunn, Samuel O.,
Editor, Railway Age Gazette,
105 W. Adams St.,
Chicago, Ill
- Durkin, Jas. E.,
Foundry Foreman,
Ft. Pitt Mall. Iron Co.,
37 Conway St.,
McKees Rocks, Pa.
- Duryea, O. C.,
President,
O. C. Duryea Corp'n.,
Nixon Hotel,
Butler, Pa.
- Eagan, D. F.,
Asst. T. M. & Div. Opr.,
Penna. System,
39 Mt. Oliver St.,
Pittsburgh, Pa.
- Eagan, J. T.,
R. F. of E., B. R. & P. Ry.,
208 W. Scribner Ave.,
Du Bois, Pa.
- Earley, J. T.,
Ind. Sales Rep.,
O'Brien Varnish Co.,
Box 114,
Saxonburg, Pa.
- Ebenhack, Omar C.,
Traffic Department,
The Koppers Co.,
Koppers Bldg.,
Pittsburgh, Pa.

- Eckes, Joseph M.,
Salesman,
Railway Products Co.,
First Natl. Bank Bldg.,
Pittsburgh, Pa.
- Eder, F. J.,
Clerk,
Aliquippa & Southern R. R.,
811 Sixteenth St.,
Aliquippa, Pa.
- Edgett, Joseph W.
Sales Engineer,
Walworth Co.,
604 Chamber of Commerce Bldg.,
Pittsburgh, Pa.
- Edgin, Geo. A.,
Asst. General Manager,
The Duff-Norton Mfg. Co.,
P. O. Box 555,
Pittsburgh, Pa.
- Edwards, Clifton H.,
Storekeeper, Ft. Pitt
Malleable Iron Co.,
1406 Chartiers Ave.,
McKees Rocks, Pa.
- Egbert, J. A.,
Vice President,
Railway Products Co.,
First Nat'l Bank Bldg.,
Pittsburgh, Pa.
- Eichenlaub, W. C.,
Sales Manager,
Pittsburgh Steel Foundry
Corp.,
Glassport, Pa.
- Eichorn, T. F.,
Asst. Supt. of Production,
Westinghouse Air Brake Co.,
400 Caldwell Ave.,
Wilmerding, Pa.
- Eisenbeis, W. H.,
Asst. Sales Manager,
Union Steel Casting Co.,
62nd and Butler Sts.,
Pittsburgh, Pa.
- Elicker, Howard,
Blacksmith,
Union Railroad,
Box 46,
North Bessemer, Pa.
- Elliott, M. W.,
Manager, Consumers Oil Co.,
1016 Constance St.,
N. S., Pittsburgh, Pa.
- Ellis, A. R.,
Gen. Mgr., Pitts. Test. Lab.,
Stevenson & Locust Sts.,
Pittsburgh, Pa.
- Ellis, C. B.,
Gen. Traffic Manager,
Gulf Companies,
1466 Frick Annex,
Pittsburgh, Pa.
- Ellis, Daniel S.,
Eastern Dist. Mgr.,
R. R. Dept.,
Worthington Pump &
Machy. Corp.,
Harrison, N. J.
- Emerick, J. B.,
Salesman,
Garlock Packing Co.,
Maloney Bldg.,
Pittsburgh, Pa.
- Emery, C. W.,
Trainmaster,
Mon. Con. R. R. Co.,
313 Spokane Ave.,
Carrick, Pgh., Pa.
- Emery, E.,
Railway Supplies,
1401 Oliver Bldg.,
Pittsburgh, Pa.
- Emsheimer, Louis,
Machinist,
Pennsylvania Railroad,
1439½ Elm St.,
Wilkinsburg, Pa.
- En Dean, J. F.,
Inspecting Engineer,
P. & L. E. R. R.,
436 Edgemont St.,
Knoxville,
Pittsburgh, Pa.
- Endsley, Louis E., Prof.,
Consulting Engr.,
516 East End Ave.,
Pittsburgh, Pa.
- England, Alexander,
Chief Engineer,
W. A. B. Co.,
428 Biddle Ave.,
Wilkinsburg, Pa.

Evans, E.,
Locomotive Engineer,
Union Railroad,
Fourth St.,
Braddock, Pa.

Everstine, A. Perry,
Accounting Engineer,
P. & W. Va. Ry.,
Wabash Bldg.,
Pittsburgh, Pa.

Faessel, Joseph, Jr.,
Clerk, B. R. & P. Ry.,
1230 Sheffield St.,
N. S., Pittsburgh, Pa.

Fagan, R.,
Chief Clerk,
Glassport Car Shop,
P. and L. E. R. R.,
1815 Ohio St.,
McKeesport,
Versailles Twp., Pa.

Faix, Joseph,
P. W. I. F., P. & L. E. R. R.,
639 Michigan Ave.,
Glassport, Pa.

Falkner, Andrew J.,
Interchange Clerk,
B. & O. R. R.,
4014 Coleman St.,
Pittsburgh, Pa.

Fallon, James J., Jr.,
Supt. Shipping So. Side Wks.,
Jones & Laughlin Steel
Corporation,
101 Poplar St.,
Carrick, Pittsburgh, Pa.

Fallon, M. L.,
Asst. Roadmaster,
B. R. & P. Ry.,
Punxsutawney, Pa.

Farfan, Robert F.,
Mechanical Engineer,
Westinghouse E. & M. Co.,
716 Lamar St.,
Wilkinsburg, Pa.

Farmer, C. C.,
Director of Engineering,
W. A. B. Co.,
Wilmerding, Pa.

Cleveland, O.
Farrington, Robert J.,
General Foreman,
P. & L. E. R. R.,
1318 Vine St.,
McKees Rocks, Pa.

Fay, Frank L., Hon.,
Chairman of the Board,
Greenville Steel Car Co.,
Greenville, Pa.

Fendner, W. J.,
Mechanical Engineer,
Schaefer Equipment Co.,
Koppers Bldg.,
Pittsburgh, Pa.

Fenton, H. H.,
District Supt.,
Pittsburgh Railways,
435 Sixth Ave.,
Pittsburgh, Pa.

Ferguson, O. G.,
W. H. Wood Co.,
3454 Forbes St.,
Pittsburgh, Pa.

Ferguson, R. B.,
Asst. Yardmaster,
Mon. Con. R. R. Co.,
3022 Elroy Ave.,
Brentwood,
Pittsburgh, Pa.

Ferrick, John T.,
Freight Cashier,
P. & L. E. R. R.,
Terminal Annex,
Pittsburgh, Pa.

Fettinger, H. O.,
Rep., Ashton Valve Co.,
126 Liberty St.,
New York, N. Y.

Fields, A. W.,
Manager, Transp'n. Dept.,
James B. Sipe & Co.,
Chamber of Commerce
Bldg.,
Pittsburgh, Pa.

Fieldson, P. H.,
Asst. Master Car Builder,
P. & L. E. R. R.,
810 Wood St.,
Coraopolis, Pa.

Filson, Harry T.,
Engine Dispatcher,
Montour Railroad,
George Street,
Coraopolis, Pa.

Finegan, Leo
Superintendent,
Flannery Bolt Co.,
Keystone Athletic Club,
Pittsburgh, Pa.

Fink, Peter J.,
General Car Foreman,
P. & L. E. R. R.,
328 Amabell St.,
19th Ward,
Pittsburgh, Pa.

Fischer, G. E.,
Clerk, Union Railroad,
2202 Hampton St.,
Swissvale, Pa.

Fisher, Earl H.,
Sales Engineer,
The Wine Rwy. Appliance Co.
Drawer C., Station E.,
Toledo, Ohio.

Fisher, E. M.,
Asst. R. F. of E.,
Penna. Railroad System,
909 E. Washington St.,
New Castle, Pa.

Fisher, G. Malcolm,
Blacksmith Foreman,
Union R. R.,
Unity Center Road,
Unity, Pa.

Fisher, Harry G.,
Clerk, B. R. & P. Ry.,
2455 Wenzel Ave.,
Pittsburgh, Pa.

Fisher, John J.,
Trav. Car Insp'r., Union R. R.,
East Pittsburgh, Pa.

Fitzgerald, T.,
Vice President,
Pittsburgh Railways Co.,
435 Sixth Ave.,
Pittsburgh, Pa.

Fitzpatrick, T. R.,
Coal Traffic Manager,
P. & L. E. R. R.,
212 Lexington Ave.,
Aspinwall, Pa.

Fitsimmons, E. S.,
Mgr. Sales,
Flannery Bolt Co.,
Flannery Bldg.,
Pittsburgh, Pa.

Flaherty, P. J.,
Pres. and General Mgr.,
Johnson Bronze Co.,
So. Mill Street,
New Castle, Pa.

Flannery, J. Rogers,
Vice Pres. Flannery Bolt Co.,
Flannery Bldg.,
Pittsburgh, Pa.

Fleck, John S.,
Chief Transp'n. Clerk,
Pass'g'r.,
Penna. R. R.
625 Kirtland St.,
Pittsburgh, Pa.

Fleckenstein, August,
P. W. Insp'r., P. & L. E. R. R.,
1108 Crucible St., 20th Wd.,
Pittsburgh, Pa.

Fletcher, Albert,
Gang Fore., Car Dept.,
Union Railroad Co.,
454 Second St.,
Pitcairn, Pa.

Flinn, R. H.,
General Superintendent,
Penna. Railroad,
Pittsburgh, Pa.

Flynn, E. E.,
Publicity Dept.,
Westinghouse Air Brake Co.,
353 Marguerite Ave.,
Wilmerding, Pa.

Follett, W. F.,
Asst. Supt.
Aliquippa & Southern R. R.,
106 King St.,
Aliquippa, Pa.

Footc, Frederick D.,
President,
Greenville Steel Car Co.,
1920 Grant Bldg.,
Pittsburgh, Pa.

Forney, H. L.,
Master Carpenter,
B. & O. R. R.,
582 South Aiken Ave.,
Pittsburgh, Pa.

- Forrest, C. H.,
Foreman, P. & L. E. R. R.,
851 Sixth Ave.,
Coraopolis, Pa.
- Forsberg, R. P.,
Principal Asst. Engineer,
P. & L. E. R. R.,
P. & L. E. Terminal Bldg
Pittsburgh, Pa.
- Foster, F. L.,
Supt. Frt. Transportation,
P. & L. E. R. R.,
Pittsburgh, Pa
- Fowler, J. C.,
Asst. R. F. of E.,
Monon. Div., Penna. R. R.,
716 Lincoln St.,
Monongahela, Pa.
- Fowler, W. E., Jr.,
3305 Meadowcroft Ave.,
South Hills Branch,
Pittsburgh, Pa.
- Fox, George W.,
Secretary,
Davis Brake Beam Co.,
146 Second Avenue,
Westmont,
Johnstown, Pa.
- Francis, G. E.,
General Foreman,
P. R. R. Co.,
E. & M., Juniata Shops,
Altoona, Pa.
- Frauenheim, A. M.,
Vice President,
Standard Auto-Tite Joints Co.
916 Forbes St.,
Pittsburgh, Pa.
- Frauenheim, Pierce H.,
Standard Auto-Tite Joints Co.
916 Forbes St.,
Pittsburgh, Pa.
- Freeman, E. H.,
Supervisor Shop Order Bureau,
B. & O. R. R.,
Pittsburgher Hotel,
Pittsburgh, Pa.
- Freshwater, F. H.,
Sales Agent,
Pressed Steel Car Co.,
Farmers Bank Bldg.,
Pittsburgh, Pa.
- Fritz, A. A.,
Clerk, Mon. Conn. R. R.,
133 Stewart Ave.,
Mt. Oliver Station,
Pittsburgh, Pa.
- Fulton, H. B.,
Movement Director,
Pennsylvania Railroad,
1023 Manor Drive,
New Kensington, Pa.
- Fults, John H.,
Clerk,
Union National Bank,
Wood Street,
Pittsburgh, Pa.
- Funfer, James,
Gang Fore., Car Dept.,
Union Railroad Co.,
R. F. D. No. 1,
Turtle Creek, Pa.
- Furch, George J.,
Gang Fore., Penna. System,
3610 Wickshire St.,
N. S., Pittsburgh, Pa.
- Gable, Harry R.,
Time Checker,
Union Railroad,
Box 35,
Irwin, Pa.
- Gabriel, E. J.,
Asst. Round House Foreman,
Union Railroad,
Church Hill Rd., Box 513,
Turtle Creek, Pa.
- Gaffney, Thomas H.,
Roadmaster,
Montour Railroad,
1364 Fourth Ave.,
Coraopolis, Pa.
- Gallinger, Geo. A.,
Gen. Manager, Pneumatic
Sales, Ingersoll-Rand Co.,
11 Broadway,
New York, N. Y.
- Gallowich, Louis,
Car Insp'r., Penna System,
3 Matson St.,
N. S., Pittsburgh, Pa.

- Gammieri, E. J.,
Fore., Core Dept.,
Ft. Pitt Malleable Iron Co.,
107 Jane St.,
McKees Rocks, Pa.
- Garant, E. J.,
Sales Manager,
Buckeye Chemical Co.,
1351 Porter St.,
Detroit, Mich.
- Gardner, George R.,
Chief Clerk—Traffic Dept.,
Pittsburgh Coal Co.,
1024 Oliver Bldg.,
Pittsburgh, Pa.
- Gardner, K. C.,
Vice President,
Greenville Steel Car Co.,
Greenville, Pa.
- Garland, W. L.,
V. P., Safety Car Htg. &
Ltg. Co.,
1160 Broad St. Station
Bldg.,
Philadelphia, Pa.
- Garlow, Andrew,
Airbrake Inspector,
Union Railroad,
North Bessemer, Pa.
- Gates, C. F.,
Asst. Chief Clerk,
P. & L. E. R. R.,
Pittsburgh, Pa.
- Geddes, James R.,
Vice President and
General Supt.,
Mon. Con. R. R. Co.,
3540 Second Ave.,
Pittsburgh, Pa.
- Geisler, Jos. J.,
Mech. Engineer,
Ft. Pitt Mall. Iron Co.,
1023 Chartiers Ave.,
McKees Rocks, Pa.
- Gellatly, Wm. R.,
Vice President,
Rees Manufacturing Corp.,
Thomas Boulevard,
Pittsburgh, Pa.
- Gerber, Harry L.,
Template Checker,
Pressed Steel Car Co.,
2739 Merwyn Ave.,
Pittsburgh, Pa.
- Geyer, Harry M.,
Asst. Trainmaster,
Mon. Con. R. R. Co.,
166 Longuevue Drive,
Mt. Lebanon, Pa.
- Gibson, A. B.,
Renewal Parts Sec. Head,
Westinghouse Elec. &
Mfg. Co.,
East Pittsburgh, Pa.
- Gilg, Henry F.,
Railway Supplies,
1426 Orchlee St.,
N. S., Pittsburgh, Pa.
- Gill, C. A.,
Supt. Motive Power,
B. & O. R. R.,
Baltimore, Md.
- Gillespie, John M.,
Vice-Pres., Lockhart Iron
& Steel Company,
P. O. Box 1243,
Pittsburgh, Pa.
- Glaser, J. P.,
Auditor Disbursements,
P. & L. E. R. R.,
909 Bellaire Avenue,
Pittsburgh, Pa.
- Glass, H. M.,
Foreman, P. R. R.,
Emporium, Pa.
- Glenn, J. H.,
R. F. of E. P. & W. Va. Ry.,
20 Obey St.,
Pittsburgh, Pa.
- Glessner, Geo. P.,
Wrecker Engineer,
Union Railroad,
R. D. No. 1,
Turtle Creek, Pa.
- Goda, P. H.,
Asst. Gen. Fore., P. R. R.,
P. O. Box 73,
Pitcairn, Pa.

Goff, J. P.,
Asst. T. M., P. & L. E. R. R.,
615 Montour St.,
Coraopolis, Pa.

Goodman, O. F.,
Sales Engineer,
Worthington Pump &
Machinery Corp.,
Koppers Bldg.,
Pittsburgh, Pa.

Gorby, Frank E.,
Supt., Union R. R.,
East Pittsburgh, Pa.

Gordon, George A.,
General Foreman,
P. & W. Va. Ry.,
56 Oakwood Road,
Crafton, Pittsburgh, Pa.

Gordon, George L.,
General Mgr. of Sales,
Lukens Steel Co.,
Coatesville, Pa.

Gorman, Charles,
District Manager,
The Garland Co.,
227 Chemung St.,
N. S., Pittsburgh, Pa.

Gorman, J. C.,
Supt., McK. Con. R. R. Co.,
1221 Fremont Ave.,
McKeesport, Pa.

Goron, F. W.,
Asst. Gen. Foreman,
P. & L. E. R. R.,
874 Railroad St.,
McKees Rocks, Pa.

Gove, William G.,
Superintendent of Equip't.,
Brooklyn-Manhattan Tran-
sit Lines,
Administration Bldg.,
Gravesend Ave.,
Brooklyn, N. Y.

Graham, A. C.,
Traffic Manager,
Youngstown Sheet and Tube
Company,
Stambaugh Bldg.,
Youngstown, Ohio

Graham, Chas. J.,
President,
Bolt, Nut & Rivet Mfrs.
Assn.,
2613 Grant Bldg.,
Pittsburgh, Pa.

Graham, Harry C.,
Pittsburgh Screw and Bolt
Corporation,
P. O. Box 72,
Pittsburgh, Pa.

Graham, James,
Inspector,
P. R. R. System,
806 Southern Ave.,
Mt. Washington Sta.,
Pittsburgh, Pa.

Gratton, James,
Master Painter,
B. R. & P. Ry.,
119 Stockdale St.,
DuBois, Pa.

Gray, C. B.,
M. M., Penna. System,
1155 Liberty Ave.,
Pittsburgh, Pa.

Gray, H. M.,
Sales Manager,
Garratt-Calahan Co.,
524 Danbury St.,
Toledo, Ohio.

Gray, Guy M.,
S. M. P.,
B. & L. E. R. R. Co.,
Greenville, Pa.

Gray, Harry H.,
Division Freight Agent,
Pennsylvania Railroad,
Clark Bldg.,
Pittsburgh, Pa.

Green, E. C.,
R. F. of E.,
B. R. & P. Ry.,
418 E. Mahoning St.,
Punxsutawney, Pa.

Greene, W. F.,
Asst. Engr., M. of W.,
Penna. System,
314 Penna. Station,
Pittsburgh Pa

- Grewe, H. F.,
S. M. P., A. C. & Y. Ry.,
1531 Goodyear Ave.
Akron, Ohio
- Grieve, Robert E.,
Passenger Train Master,
P. R. R.,
740 East End Ave.,
Pittsburgh, Pa.
- Griffith, F. A.,
District Manager,
Garlock Packing Co.,
Chamber of Commerce Bldg.,
Pittsburgh, Pa.
- Grimshaw, F. G.,
Works Mgr., P. R. R. Sys.,
Altoona, Pa.
- Groves, John Q.,
President,
Deposit National Bank,
DuBois, Pa.
- Guger, Julius,
Sub Foreman,
Pressed Steel Car Co.,
1600 Harlow St.,
Corliss Station,
Pittsburgh, Pa.
- Gunnison, Walter L.,
Representative,
Enterprise Railway
Equipment Co.,
Rookery Building,
Chicago, Ill.
- Gur, Frederick W.,
Salesman,
Walworth Company,
104 Lakewood Ave.,
West View, Pittsburgh, Pa.
- Guy, W. S.,
Traffic Manager,
Carnegie Steel Co.,
812 Carnegie Bldg.,
Pittsburgh, Pa.
- Gwaltney, R. H.,
Vice President,
The Symington Co.,
250 Park Ave.,
New York, N. Y.
- Hackett, C. M.,
Boiler Maker Fore.,
Penna. R. R.,
618 Pennsylvania Ave.,
Oakmont, Pa.
- Hale, Chas. E.,
Baldwin Loco. Works,
627 Railway Exchange,
Chicago, Ill.
- Hall, Charles B.,
Supt. Coal Docks,
Union Railroad Co.,
1600 Vermont Ave.,
McKeesport, Pa.
- Hall, Chester C.,
Clerk,
Rieck-McJunkin Dairy Co.,
4119 Millington Road,
Pittsburgh, Pa.
- Haller, C. T.,
President,
Colonial Supply Co.,
217 Water St.,
Pittsburgh, Pa.
- Haller, Jacob,
Asst. Fore., Wheel and Axle
Dept., Pressed Steel Car
Company,
1808 Jane St.,
S. S., Pittsburgh, Pa.
- Haller, Nelson M.,
Sup'r. Scrap & Reclamation,
P. & L. E. E. R. R.,
5853 Aylesboro Ave.,
Pittsburgh, Pa.
- Hamilton, Hugh M.,
General Foreman, Pass. Cars,
Pressed Steel Car Co.,
3026 Merwyn Ave.,
Corliss Station,
Pittsburgh, Pa.
- Hamilton, Wm.,
Mgr., Railway Sales Dept.,
The Ferbert Shorndorfer Co.,
P. O. Box 5077,
East Liberty Sta.,
Pittsburgh, Pa.
- Hamilton, W. H.,
Supt. Roadway & Structures,
Montour Railroad,
Coraopolis, Pa.
- Hammond, H. S.,
Sales Agent,
Pressed Steel Car Co.,
55 Broad St.,
New York, N. Y.

- Hancock, Milton L.,
Office Engineer,
Westinghouse Air Brake Co.,
557 Broadway Extension,
East McKeesport, Pa.
- Hankins, F. W.,
Chief of Motive Power,
Pennsylvania Railroad,
10-C Rittenhouse Plaza,
19th & Walnut Sts.,
Philadelphia, Pa.
- Hanna, R. B.,
C. C. to Superintendent,
P. & L. E. R. R.,
132 P.&L.E. Annex Bldg.,
Pittsburgh, Pa.
- Hansen, Wm. C.,
Sales Engr., A. Stucki Co.,
419 Oliver Bldg.,
Pittsburgh, Pa.
- Harbaugh, Chas. P.,
Wreck Master,
Union Railroad,
East Pittsburgh, Pa.
- Harger, E. S.,
Gen. Fore., P. & L. E. R. R.,
1455 Myrtle Ave.,
New Brighton, Pa.
- Harkness, W. S.,
Foreman, Penna. System,
511 Second St.,
Pitcairn, Pa.
- Harper, A. M.,
Mgr. of Sales,
Carnegie Steel Co.,
Carnegie Bldg.,
Pittsburgh, Pa.
- Harper, G. C.,
General Supt.,
Montour Railroad,
State Ave.,
Coraopolis, Pa.
- Harper, J. T.,
Asst. to Mech. Supt.,
Montour Railroad,
Gayley R. F. D.,
McKees Rocks, Pa.
- Harper, James W.,
Medical Examiner,
Penna. R. R.,
Penna. Station,
Pittsburgh, Pa.
- Harris, Francis C.,
Yard Clerk,
Carnegie Steel Co.,
1118 Franklin Ave.,
North Braddock, Pa.
- Harris, J. P.,
C. C. to Division Engineer,
B. & O. R. R. Co.,
139 Poplar Drive,
South Hills Sta.,
Pittsburgh, Pa.
- Harter, Arnold,
Ass't Fore., W. A. B. Co.,
353 Marguerite Ave.,
Wilmerding, Pa.
- Hartsuff, O. J. H.,
Gen. Supt., Carnegie Stl. Co.,
Edgar Thomson Works,
Braddock, Pa.
- Harvat, Frank V.,
Airbrake Inspector,
Union Railroad,
R. D. 1—Box 95,
Turtle Creek, Pa.
- Hastings, Walter S.,
R. F. of E.,
Aliquippa & Southern R. R.,
Aliquippa, Pa.
- Hayden, William F.,
Asst. Baggage Agent,
P. & L. E. R. R.,
P. & L. E. Terminal,
Pittsburgh, Pa.
- Hayes, George,
Yardmaster,
Aliquippa & Southern R. R.,
1809 Irwin St.,
Aliquippa, Pa.
- Hayes, George W.,
Air Brake Foreman,
P. & L. E. R. R.,
1225 Vance Ave.,
Coraopolis, Pa.
- Hayes, R. F.,
Adams & Westlake Co.,
50 Church St.,
New York, N. Y.
- Hays, Harry E.,
Ass't. R. F. of E.,
Penna. R. R.,
520 N. Fairmount Ave.,
Pittsburgh, Pa.

- Hayward, Carlton,
C. C. to Gen. Supt. Motive
Power,
Pennsylvania R. R.,
585 So. Negley Ave.,
Pittsburgh, Pa.
- Heckman, C. J.,
Draftsman,
Spang, Chalfant Co.,
129 Sixth St.,
Aspinwall, Pa.
- Heed, H. J.,
Agent, Ry. Express Agency,
26th & Liberty Ave.,
Pittsburgh, Pa.
- Heffelfinger, A. E.,
Sales Manager,
The Syngton Co.,
250 Park Ave.,
New York City
- Heinlein, Geo. J.,
Gang Fore., Penna. System,
220 Shaler St.,
Mt. Washington Sta.,
Pittsburgh, Pa.
- Hektner, Joel,
Asst. Engr., Ry. Division,
Timken Roller Bearing Co.,
Canton, Ohio.
- Hench, Norman M.,
Sales Manager,
Illinois Steel Co.,
Room 1602,
208 S. La Salle St.,
Chicago, Ill.
- Henry, C. L.,
Ass't. M. M., Penna. R. R.,
Mingo Junction, Ohio.
- Henry, Frank P.,
General Foreman,
Carnegie Steel Co.,
36 Danvers Ave.,
Ingram, Pa.
- Hepplewhite, M. R.,
Dist. Passenger Agent,
P. & L. E. R. R. Co.,
6022 Jackson St.,
E. E., Pittsburgh, Pa.
- Herald, M. A.,
President, United Car &
Equipment Company,
Westinghouse Bldg.,
Pittsburgh, Pa.
- Herlehy, David T.,
P. W. I. F., P. & L. E. R. R.,
Ohio Avenue,
Glassport, Pa.
- Herrick, Andrew S.,
Foreman,
Pressed Steel Car Co.,
112 Ella St.,
McKees Rocks, Pa.
- Herrold, A. E.,
M. M. & M. C. B.,
Mon. Conn. R. R.,
3915 Winterburn Ave.,
Pittsburgh, Pa.
- Hershey, Quincy W.,
Supervisor of Maintenance
Sales, Westinghouse
E. & M. Co.,
7527 Rosemary Road,
Pittsburgh, Pa.
- Hervy, R. S.,
Auditor Freight Accounts,
P. & L. E. R. R.,
722 Main Street,
Coraopolis, Pa.
- Herzog, Charles C.,
Chief Clerk,
Penna. Railroad,
111 Horner St.,
Glenshaw, Pa.
- Hester, L. A.,
Sales Engr., Heavy Trac.,
Westinghouse Elec. &
Mfg. Co.,
East Pittsburgh, Pa.
- Hettler, R. C.,
Foreman, Car Dept.,
Penna. Railroad,
1722 Brighton Road,
N. S., Pittsburgh, Pa.
- Hewlett, H. D.,
Foreman,
P. & L. E. R. R.,
613 Island Ave.,
McKees Rocks, Pa.
- Hickling, F. G.,
Mgr. Transportation Div.,
Westinghouse Elec. &
Mfg. Co.,
Grant Bldg.,
Pittsburgh, Pa.

- Hiester, E. G.,
 Asst. Dining Car Agent,
 Penna. R. R.,
 3125 Perryville Ave.,
 Pittsburgh, Pa.
- Hill, W. D.,
 Auditor,
 Monongahela Rwy. Co.,
 Century Bldg.,
 Pittsburgh, Pa.
- Hilstrom, Anton V.,
 Piece Work Inspector,
 P. & L. E. R. R.,
 3066 Glen Mawr. Ave.,
 Pittsburgh, No. 4, Pa.
- Hindman, S. M.,
 Schaefer Equipment Co.,
 Koppers Bldg.,
 Pittsburgh, Pa.
- Hodge, Edwin, Jr.,
 President,
 Pittsburgh Knife &
 Forge Co.,
 Drawer "C,"
 Coraopolis, Pa.
- Hoffstot, H. P.,
 Vice President,
 Pressed Steel Car Co.,
 Farmers Bank Bldg.,
 Pittsburgh, Pa.
- Hogg, Francis,
 Designer,
 General Electric Co.,
 2326 Station Road,
 Wesleyville, Pa.
- Holiday, Harry,
 General Superintendent,
 The American Rolling Mill
 Company,
 Butler, Pa.
- Holleran, Thomas J.,
 Engineer,
 Monongahela Connecting
 R. R.,
 251 Ninth Ave.,
 West Homestead, Pa.
- Hollis, H. E.,
 Secretary-Treasurer,
 Pittsburgh Incinerator Co.,
 213 Grandview Ave.,
 Mt. Washington Station,
 Pittsburgh, Pa.
- Holmes, Blaine,
 Asst. Yardmaster,
 Pennsylvania Railroad,
 258 Greensburg Pike,
 Turtle Creek, Pa.
- Holmes, E. H.,
 Sales Dept.,
 Ft. Pitt Malleable Iron Co.,
 3662 Middletown Road,
 McKees Rocks, Pa.
- Holohan, S. V.,
 Passenger Conductor,
 B. R. & P. Ry.,
 364 Norwood Ave.,
 Buffalo, N. Y.
- Honsberger, G. W.,
 Salesman,
 Westinghouse E. & M. Co.,
 Grant Bldg.,
 Pittsburgh, Pa.
- Hood, C. E.,
 Sales Department,
 Standard Steel Car Co.,
 Frick Building,
 Pittsburgh, Pa.
- Hood, D. G.,
 Asst. to Traffic Manager,
 P. & L. E. R. R. Co.,
 Pittsburgh, Pa.
- Hood, J. M.,
 Chemist, Ft. Pitt Malleable
 Iron Co.,
 419 Russellwood Ave.,
 McKees Rocks, Pa.
- Hoover, Jacob W.,
 Chf. Traffic Dispatcher,
 Carnegie Steel Co.,
 816 Carnegie Bldg.,
 Pittsburgh, Pa.
- Hopkins, G. M.,
 Foreman, Boiler Shop,
 Montour Railroad,
 715 Idlewood Ave.,
 East Carnegie, Pa.
- Horan, John A.,
 Gang Fore., Penna. System,
 Pitcairn Car Shops,
 Pitcairn, Pa.
- Horner, William,
 General Yardmaster,
 Mon. Con. R. R. Co.,
 3526 Beechwood Blvd.,
 Pittsburgh, Pa.

- Horton, H. R.,
Supt. of Instruction,
St. Louis Public Service Co.
2423 N. Spring Ave.,
St. Louis, Mo.
- Horwick, George M.,
Car Distributor,
B. R. & P. Ry.,
3 Jefferson St.,
Punxsutawney, Pa.
- Householder, J. A.,
Foreman,
Westinghouse Air Brake Co.,
Madison Ave.,
Irwin, Pa.
- Howard, L. F.,
Chief Engineer,
Union Switch & Signal Co.,
Swissvale, Pa.
- Howe, Harry,
Engineer of Rwy. Equip't.,
Manganese Steel Forge Co.,
Richmond St. & Erie Ave.,
Philadelphia, Pa.
- Howe, H. W.,
Yard Master,
Aliquippa & Southern R. R.,
573 Remo St.,
Rochester, Pa.
- Howells, Wyman,
Dist. Sales Representative,
Reading Iron Co.,
First Nat'l. Bank Bldg.,
Pittsburgh, Pa.
- Huber, H. G.,
Master Mechanic, P. R. R.,
Fayette Title & Tr. Bldg.,
Uniontown, Pa.
- Huesner, R. D.,
Gen'l. Coal Freight Agent,
Reading Company,
Reading Terminal,
Philadelphia, Pa.
- Hughes, J. E.,
Supt., P. & L. E. R. R.,
134 P. & L. E. Term'l. Bldg.,
Pittsburgh, Pa.
- Humphrey, A. L.,
President,
Westinghouse Air Brake Co.
Wilmerding, Pa.
- Hunt, Lawrence,
Gen. Fore., Tank Car Dept.,
Pressed Steel Car Co.,
272 Balph Ave.,
Bellevue, Pa.
- Hunter, Bernard E.,
Westinghouse Air Brake Co.,
827 Railway Exchange Bldg.,
Chicago, Ill.
- Huntington, H. E.,
Asst. Traffic Manager,
B. R. & P. Ry.
155 Main St. W.,
Rochester, N. Y.
- Hussong, Albert C.,
General Foreman,
Washington Terminal Co.
Washington, D. C.
- Hykes, W. H.,
Assistant Trainmaster,
Penna. R. R. Co.,
526 Sixth St.,
Oakmont, Pa.
- Hyndman, F. T.,
3115 Lincoln Blvd.,
Cleveland, Ohio
- Inks, S. W.,
General Foreman,
P. & L. E. R. R.
Box 253,
Dawson, Pa.
- Irons, L. O.,
Signal Material Supv'r.,
P. & L. E. R. R.,
Beaver Falls, Pa.
- Irwin, Robert D.,
Foreman,
Westinghouse Air Brake Co.,
521 Holmes St.,
Wilkesburg, Pa.
- Jack, Arthur C.,
Engineer, Track Appliances,
Carnegie Steel Co.,
Carnegie Bldg.,
Pittsburgh, Pa.
- Jack, R. Ralph,
Asst. Paymaster,
Union Railroad,
54 Haslett Ave.,
Lincoln Place, Pa.

- Jackson, W. M.,
Asst. R. F. of E.,
Pennsylvania Railroad,
241 Fourth St.,
Aspinwall, Pa.
- Jacobs, M. H.,
G. F. A.,
Western Maryland R. R.,
408 Park Building,
Pittsburgh, Pa.
- Jacobs, William H.,
Crew Dispatcher,
P. & L. E. R. R.,
Dickerson Run, Pa.
- Jahnke, Karl W.,
Piece-work Inspector,
P. & L. E. R. R. Co.,
238 Singer Ave.,
McKees Rocks, Pa.
- Jenkner, Oscar,
G. Y. M., Union R. R.,
503 Hunter St.,
Turtle Creek, Pa.
- Jenneas, D. H.,
R. F. of E., Penna. R. R.,
801 Heberton Ave.,
Pittsburgh, Pa.
- Johnson, A. B.,
Sales Engr., Standard Steel
Car Company,
1120 Frick Bldg.,
Pittsburgh, Pa.
- Johnson, E. A.,
15 N. Euclid Ave.,
Bellevue, Pittsburgh, Pa.
- Johnson, George T.,
Vice President, The
Buckeye Steel Castings Co.,
South Parsons Ave.,
Columbus, Ohio
- Johnson, I. S.,
Resident Material Inspector,
The Pennsylvania Railroad,
Room 402-1013 Penn Ave.,
Pittsburgh, Pa.
- Johnson, J. W.,
City Mgr., Amer.
Rwy. Express Co.,
926 Penn Ave.,
Pittsburgh, Pa.
- Johnson, Nelson E.,
Machinist, P. & L. E. R. R.,
68 Dunn St.,
McKees Rocks, Pa
- Johnson, Robert S.,
Engr., P. & W. Va. Ry.,
67 Water St.,
Pittsburgh, Pa.
- Johnson, Wm. M.,
Gen. Superintendent,
E. & L. E. R. R.,
Greenville, Pa.
- Johnston, A. L.,
Car Inspector,
Union Railroad,
Box 188,
Unity, Pa.
- Johnston, Geo. E.,
Clerk, Union Railroad,
26 Hill St.,
Hays, Pa.
- Johnston, J. C.,
Yard Master,
Union R. R. Co.,
Box No. 3,
N. Bessemer, Pa.
- Johnston, W. A.,
Gang Fore., Penna. System,
85 Westmoreland Road,
Trafford, Pa.
- Jones, H. W.,
Gen. Supt., Motive Power,
Pennsylvania Railroad,
905 Maryland Ave.,
Pittsburgh, Pa.
- Jones, Louis E.,
Department Manager,
American Steel Foundries,
North Wrigley Bldg.,
Chicago, Ill.
- Jones, Martin,
Car Inspector,
P. A. & McK. R. R.,
3615 Oltman St.,
Corliss Station,
Pittsburgh, Pa.
- Jones, W. F.,
Purchasing Agent,
Dining Service,
New York Central Lines,
466 Lexington Ave.,
New York, N. Y.

- Jones, Wm. J.,
Sub Foreman,
Pressed Steel Car Co.,
R. F. D., Clever Road,
McKees Rocks, Pa.
- Jones, William M.,
Clerk, Union Railroad,
5020 Glenwood Ave.,
Hazelwood Sta.,
Pittsburgh, Pa.
- Jungbluth, A.,
Engineer,
Peoples East End Real
Estate Co.,
6616 Jackson St.,
E. E., Pittsburgh, Pa.
- Justice, R. W.,
Distributor,
E. F. Houghton & Co.,
907 Bessemer Bldg.,
Pittsburgh, Pa.
- Kagarise, Preston,
Gen. Car Inspector,
Pennsylvania Railroad,
Pennsylvania Sta.,
Pittsburgh, Pa.
- Kain, Harry,
Sales Engineer,
Walworth Company,
604 Chamber of Com-
merce Bldg.,
Pittsburgh, Pa.
- Kalik, John R.,
Air Brake Inspector,
Union Railroad,
R. D. 1,
Turtle Creek, Pa.
- Kamerer, R. W.,
General Agent,
P. & L. E. R. R.,
Terminal Building,
Pittsburgh, Pa.
- Karnes, W. T.,
General Foreman,
P. & L. E. R. R.,
330 Ohio Ave.,
Glassport, Pa.
- Kaup, Earle W.,
Fitter,
Pressed Steel Car Co.,
119 S. Ohio St.,
Avalon, Pa.
- Kaup, Harry E.,
Gen. Supt.,
Pressed Steel Car Co.,
McKees Rocks, Pa.
- Kavanagh, D.,
Storekeeper,
Union Railroad,
East Pittsburgh, Pa.
- Kearney, J. W.,
President, The R. & M. E. Co.
Perry Payne Bldg.,
Cleveland, Ohio.
- Keefe, Edward A.,
Coal Billing Agent,
B. & O. R. R.,
112 Grandview Ave.,
Mt. Washington,
Pittsburgh, Pa.
- Keenoy, R. P.,
V. P. & G. S., D. S. R. R.,
902 Jancey St.,
E. E., Pittsburgh, Pa.
- Kelin, H. S.,
Draftsman, Union R. R., Co.,
R. F. D. 4, Box 208-L,
Millvale,
Pittsburgh, Pa.
- Kellenberger, K. E.,
Publicity Manager,
Union Switch & Signal Co.,
P. O. Box 127,
Wilkinsburg, Pa.
- Keller, D. P.,
Conductor,
P. & W. Va. Ry.,
524 Forest Ave.,
Carnegie, Pa.
- Kelley, Henry D.,
District Manager,
Metal & Thermit Corp.,
1514 Fayette St.,
N. S., Pittsburgh, Pa.
- Kelly, H. B.,
Gen. R. F. of E.,
P. & L. E. R. R.,
821 Davis Ave.,
McKees Rocks, Pa.
- Kelley, J. B.,
Bradfordwoods, Pa.
- Kelly, J. P.,
Asst. Superintendent,
P. & L. E. R. R.,
922 School St.,
Coraopolis, Pa.

- Kelly, J. W.,
Boiler Tube Expert,
National Tube Co.,
515 N. Grove Ave.,
Oak Park, Ill.
- Kelly, Leo F.,
Sales Representative,
Pgh. Screw & Bolt Corp.,
3913 California Ave.,
N. S., Pittsburgh, Pa.
- Kelly, Leo J.,
Superintendent,
Ft. Pitt Mall. Iron Co.,
3036 Bergman St.,
Pittsburgh, Pa.
- Kempton, J. W.,
Gen. Sec'y., Y. M. C. A.,
P. & L. E. R. R.,
Newell, Pa.
- Kennedy, A. R.,
Traffic Manager,
Pittsburgh Steel Co.,
Union Trust Building,
Pittsburgh, Pa.
- Kennedy, F. D.,
Supt., Railway Dept.,
Westinghouse Elec. &
Mfg. Co.,
East Pittsburgh, Pa.
- Kennedy, F. J.,
Auditor Pass, Accounts,
P. & L. E. R. R.,
Box 206,
New Brighton, Pa.
- Kennedy, Julian,
Consulting Engineer,
Bessemer Bldg.,
Pittsburgh, Pa.
- Kepler, G. W.,
Secretary and Treasurer,
B. & L. E. R. R. Co.,
Union Trust Bldg.,
Pittsburgh, Pa.
- Kerby, Frederick,
Asst. to Chief of Motive
Power and Equipment.
B. & O. R. R.,
218 Pennsylvania Ave.,
Cumberland, Md.
- Kernan, John L.,
Shipper,
Pressed Steel Car Co.,
340 Russellwood Ave.,
McKees Rocks, Pa.
- Kerr, Clark R.,
Asst. Car Foreman,
Union Railroad Co.,
East Pittsburgh, Pa.
- Kessler, Howard,
R. F. of E., P. & L. E. R. R.,
135 Ameha St.,
McKees Rocks, Pa.
- Ketchpel, Paul A.,
Mechanical Engineer,
Fort Pitt Stoker Co.,
35 Water St.,
Pittsburgh, Pa.
- Ketterer, Frederick P.,
Office Train Master,
P. & L. E. R. R.,
1518 McFarland Road,
Dormont, Pa.
- Keys, Arthur H.,
General Car Foreman,
B. & O. R. R.,
2938 Glenmore Ave.,
Dormont, Pittsburgh, Pa.
- Kidd, Howard C.,
Professor of Commerce,
University of Pittsburgh,
Pittsburgh, Pa.
- Kiefer, Fred,
Pasteurizer,
Rieck-McJunkin Dairy Co.,
6530 Dean St.,
East Liberty,
Pittsburgh, Pa.
- Kight, R.,
Conductor,
Western Maryland Ry. Co.,
Thomas, W. Va.
- Kilmer, George L.,
Asst. to President,
Bradford Corporation,
370 Lexington Ave.,
New York City
- Kimling, Karl,
Asst. Mgr. Central Whse.,
P. & L. E. R. R.,
85 Harwood Street,
Pittsburgh, Pa.
- King, C. F., Jr.,
General Engineer,
Westinghouse Elec. &
Mfg. Co.,
East Pittsburgh, Pa.

- King, T. C.,
King Metal Products Co.,
Anniston, Ala.
- Kinney, Thomas F.,
Asst. Foreman, Dept. "U,"
Westinghouse Air Brake Co.,
233 Welsh Ave.,
Wilmerding, Pa.
- Kirkpatrick, H. F.,
Chief Clerk,
Union Steel Castings Co.,
62nd and Butler Sts.,
Pittsburgh, Pa.
- Kirkpatrick, R. L.,
Traction Apparatus Sales,
Westinghouse Elec. &
Mfg. Co.,
East Pittsburgh, Pa.
- Kiser, Joseph A., Jr.,
Gang Fore., Car Dept.,
Union Railroad Co.,
R. F. D. No. 1,
Verona, Pa.
- Klann, Peter B.,
Sub Foreman,
Pressed Steel Car Co.,
801 Eleventh St.,
West Park,
McKees Rocks, Pa.
- Kleber, Charles, J.,
P. W. I.—P. & L. E. R. R.,
R. F. D., No. 1, Box 104,
McKees Rocks, Pa.
- Kleinhans, Harry,
942 Union Trust Bldg.,
Pittsburgh, Pa.
- Kleinhans, L.,
District Sales Mgr.,
Industrial Brown Hoist
Corporation,
2401 Koppers Bldg.,
Pittsburgh, Pa.
- Kline, I. N.,
Foreman,
Westinghouse Airbrake Co.,
510 Grandview Ave.,
East Pittsburgh, Pa.
- Knapp, A. D.,
President,
Nicola Lumber Co.,
1410 Farmers Bk. Bldg.,
Pittsburgh, Pa.
- Knapp, K. M.,
District Manager,
Universal Steel Co.,
Chamber of Com. Bldg.,
Pittsburgh, Pa.
- Knott, M. Thomas,
Salesman,
Motch & Merryweather
Machy. Co.,
Clark Bldg.,
Pittsburgh, Pa.
- Knox, Wm. J.,
112 Second Ave.,
DuBois, Pa.
- Koch, P. R.,
Station Master,
P. & L. E. R. R.,
Pittsburgh, Pa.
- Koehler, Paul A.,
Clerk,
Union Railroad Co.,
739 Glenn St.,
Wilkinsburg, Pa.
- Kohl, H. J.,
Gen. Car Fore.,
P. & L. E. R. R.,
1106 Tweed St.,
Pittsburgh, Pa.
- Kohute, Hilary Geo.,
Clerk, Union R. R.,
East Pittsburgh, Pa.
- Kondej, Henry,
Tester,
Westinghouse Airbrake Co.
353 Marguerite Ave.,
Wilmerding, Pa.
- Krause, Harry A.,
Gang Fore., Penna. System,
160 Race St.,
Edgewood, Pittsburgh, Pa.
- Kromroy, F. R.,
South American Rep.,
Westinghouse Airbrake Co.
c/o G. C. Dehne,
Wilmerding, Pa.
- Kroske, J. F.,
Mgr., P. T. Sales, Ingersoll
Rand Co.,
706 Chamber of Commerce
Bldg.,
Pittsburgh, Pa.

- Kummer, Jos. H.,
Supt. of Orders,
Fort Pitt Mall. Iron Co.,
209 Greydon Ave.,
McKees Rocks, Pa.
- Lackner, R. A.,
V. P., Neely Nut & Bolt Co.,
26 So. 22nd St.,
Pittsburgh, Pa.
- Ladd, Geo. T.,
President,
United Engineering & Fdy.
Company,
2307 Farmers Bank Bldg.,
Pittsburgh, Pa.
- Laird, E. C.,
Editor & Publisher,
The Railroad Herald,
1038 W. Peachtree St., N. W.
Atlanta, Ga.
- Laird, Geo. R.,
Clerk, Penna. System,
938 Milton St.,
Wilkinsburg, Pa.
- Lally, C. V.,
General Manager of Sales,
Pgh. Steel Products Co.,
605 N. Negley Ave.,
Pittsburgh, Pa.
- Lanahan, Frank J.,
President, Fort Pitt
Mall. Iron Co.,
P. O. Box 1054,
Pittsburgh, Pa.
- Lanahan, J. S.,
Vice-President, Fort Pitt
Mall. Iron Co.,
127 Elysian Ave.,
Pittsburgh, Pa.
- Landgraf, F. K.,
General Supt.,
Flannery Bolt Co.,
118 Crafton Ave.,
Crafton, Pa.
- Landis, W. C.,
Superintendent,
Westinghouse Air Brake
Company,
Wilmerding, Pa.
- Landsperger, Elmer C.,
General Yard Master,
P. & L. E. R. R.,
209 Monongahela Ave.,
Glassport, Pa.
- Lang, W. C.,
Master Car Builder,
P. & L. E. R. R.,
McKees Rocks, Pa.
- Lappe, J. C.,
President,
Lappe Supply Co.,
405 Penn Ave.,
Pittsburgh, Pa.
- Larsen, Jacob C.,
Sales Engineer,
The Buckeye Steel
Castings Co.,
So. Parsons Ave.,
Columbus, Ohio.
- Laughner, Carl L.,
Gen'l. Foreman, P. S. C. Co.,
1009 James St.,
N. S., Pittsburgh, Pa.
- Laurent, Jos. A.,
Shipper,
Fort Pitt Mall. Iron Co.,
206 Bruce St.,
McKees Rocks, Pa.
- Lawler, Joseph A.,
Supt. Trans.,
Carnegie Steel Co.,
Edgar Thomson Works,
Braddock, Pa.
- Lawson, A. F.,
Foreman Painter,
P. & L. E. R. R.,
322 Reifert St.,
Pittsburgh, Pa.
- Lawson, Rowland R.,
Clerk, B. R. & P. Rv.,
2955 Merwyn Ave.,
Corliss Station,
Pittsburgh, Pa.
- Leach, J. T.,
M. M., Penna System,
1001 Broadway,
Juniata P. O.,
Altoona, Pa.
- Leach, Wm. A.,
Mech. Draftsman,
W. Elec. & Mfg. Co.,
332 Charles St.,
Turtle Creek, Pa.

- Leahy, Michael F.,
Sub-Foreman,
Pressed Steel Car Co.,
3420 Fleming Ave.,
N. S., Pittsburgh, Pa.
- Leavers, E. J.,
Asst. Foreman,
Pressed Steel Car Co.,
212 Wright St.,
McKees Rocks, Pa.
- Leban, J. L.,
Second Ass't. Dis't. Supt.,
Pullman Co.,
1602 Broadway Ave.,
S. H. B., Pittsburgh, Pa.
- Lee, Elisha,
Vice Pres., Penna. R. R. Sys.,
Broad Street Station,
Philadelphia, Pa.
- Lee, L. A.,
Supt. Teleg., P. & L. E. R. R.,
64 Terminal Annex Bldg.,
Pittsburgh, Pa.
- Lees, Thomas,
Reymer & Brothers, Inc.,
3357 Delaware Ave.,
Pittsburgh, Pa.
- Leet, C. S.,
Land Agent,
B. & L. E. R. R.,
P. O. Box 456,
Pittsburgh, Pa.
- Lehr, Harry W.,
Genl. Fore. Pass's. Car Insp.,
P. R. R. Co.,
516 Arlington Apts.,
Center & Aiken Aves.,
Pittsburgh, Pa.
- Leiper, C. I.,
Gen. Mgr., Central Region,
P. R. R. System,
Pennsylvania Station,
Pittsburgh, Pa.
- Leisenring, W. J.,
Salesman,
American Locomotive Co.,
Farmers Bank Bldg.,
Pittsburgh, Pa.
- Leonard, C. W.,
Salesman, Independent
Pneumatic Tool Co.,
718 Bessemer Bldg.,
Pittsburgh, Pa.
- Leonard, D. L.,
President,
Gen. Equipment Co., Inc.,
342 Madison Ave.,
New York, N. Y.
- Lewis, Goodrich Q.,
Mechanical Engineer,
W. H. Miner, Inc.,
Rookery Bldg.,
Chicago, Ill.
- Lewis, Herbert,
Vice President,
Universal Packing Corp'n.,
108 Smithfield St.,
Room 310,
Pittsburgh, Pa.
- Lewis, John H.,
Construction Dept.,
P. & L. E. R. R. Co.,
Wayne Apartments,
Beaver, Pa.
- Lewis, Walter M.,
Gang Foreman,
Penna. Railroad System,
172 Olympia Street,
Pittsburgh, Pa.
- Lightsell S. M.,
Boiler Foreman,
P. R. R.,
2674 Wind Gap Road,
Ingram, Pittsburgh, Pa.
- Lincoln, John J., Jr.,
Air Reduction Sales Co.,
1116 Ridge Ave.,
N. S., Pittsburgh, Pa.
- Lindahl, A. M.,
Y. M., Union R. R.,
1732 Laketon Road,
Wilkinsburg, Pa.
- Lindsay, J. H.,
Div. Accountant,
B. & O. R. R.,
1518 Center St.,
Wilkinsburg, Pa.
- Lingle, Chas. M.,
Train Master,
P. & L. E. R. R. Co.,
1305 Union Ave.,
McKeesport, Pa.

Linsengler, Allen J.,
Gang Foreman,
Union Railroad,
212 Dixon Ave.,
East Pittsburgh, Pa.

Lobez, P. L.,
Designing Engineer,
Bendix-Westinghouse Co.,
418 Swissvale Ave.,
Wilksburg, Pa.

Lobough, Smith S.,
Conductor,
B. R. & P. Ry.,
209 Oakland Ave.,
Punxsutawney, Pa.

Lockard, Ira B.,
Gang Leader, Union R.R.,
607 Fawcett Ave.,
McKeesport, Pa.

Loeffler, George O.,
District Sales Manager,
King Pneumatic Tool Co.,
905 Union Trust Bldg.,
Pittsburgh, Pa.

Lohr, Allen W.,
Commercial Engr.,
W. A. B. Co.,
1613 Laketon Road,
Wilksburg, Pa.

Long, Chas. R., Jr.,
Prest. Chas. R. Long, Jr., Co.,
Louisville, Ky.

Long, R. M.,
Air Brake Inspector and
Instructor,
P. & L. E. R. R.,
McKees Rocks, Pa.

Long, Walter,
Walter Long Mfg. Co.,
14th & Muriel Sts.,
Pittsburgh, Pa.

Longdon, Clyde V.,
Asst. Engineer, T. & E. D.
Dept.,
Westinghouse Air Brake Co.,
561 Broadway Extension,
East McKeesport, Pa.

Lorenzo, Dr. Frank,
Surgeon, B. R. & P. Ry.,
312 Union St.,
Punxsutawney, Pa.

Loudenbeck, H. C.,
Chief Chemist,
Westinghouse Air Brake Co.,
Wilmerding, Pa.

Lowe, W. D.,
Civil Engineer,
Kopper Co.,
2121 Federal St. Ext.,
N. S., Pittsburgh, Pa.

Lower, N. M.,
President,
Lower Stoker Co.,
932 Lincoln Ave.,
N. S., Pittsburgh, Pa.

Lowman, John R.,
Steel Chaser,
Pressed Steel Car Co.,
3303 Fleming Ave.,
N. S., Pittsburgh, Pa.

Lowndes, T. H.,
Asst. Superintendent,
National Bearing Metals
Corporation,
928 Shore Ave.,
N. S., Pittsburgh, Pa.

Lowry, Wm. F., Jr.,
Salesman,
American Car &
Foundry Co.,
2215 Farmers Bank
Bldg.,
Pittsburgh, Pa.

Luddy, Wm. E.,
E. H. Fore.,
Penna. R. R. System,
7704 Stanton St.,
Swissvale, Pa.

Ludgate, B. A.,
Asst. Engineer,
P. & L. E. Railroad Co.,
Pittsburgh, Pa.

Lunden, Carl J.,
Draftsman,
P. & L. E. R. R.,
267 Fisk St.,
Pittsburgh, Pa.

Lustenberger, L. C.,
Asst. to Asst. Gen'l. Mgr.,
Sales, Carnegie Steel Co.,
Carnegie Bldg.,
Pittsburgh, Pa.

- Lynch, Bernard J.,
Asst. Supervisor,
Mon. Con. R. R. Co.,
3202 Iowa St.,
Pittsburgh, Pa.
- Lynch, C. A.,
Fort Pitt Steel Casting Co.,
2564 Beechwood Blvd.,
Pittsburgh, Pa.
- Lynch, E. K.,
Special R. R. Rep.,
Chicago Pneum. Tool Co.,
Commercial Trust Bldg.,
Philadelphia, Pa.
- Lynn, Sam'l.,
Supt. of Rolling Stock,
P. & L. E. R. R.,
McKees Rocks, Pa.
- Lynn, Wm., Jr.,
Gen. Foreman Car Dept.,
P. & L. E. R. R.,
Box 377, R. D. 3,
Coraopolis, Pa.
- MacDonald, William C.,
Special Agent, Contracts,
Penna. R. R. System,
254 Allison Ave.,
Emsworth, Pa.
- Mace, W. S.,
Yard Master,
Aliquippa & Southern R. R.,
1815 McMin St.,
Aliquippa, Pa.
- Mackert, A. A.,
Asst. Design Engineer,
W. A. B. Co.,
450 Caldwell Ave.,
Wilmerding, Pa.
- Magill, W. E.,
D. F. A.,
B. & O. R. R.,
474 Teece Ave.,
Bellevue, Pa.
- Maley, W. E.,
Supervisor, Bridges & Bldgs.,
B. R. & P. Ry.,
115 Grant St.,
DuBois, Pa.
- Maliphant, C. W.,
Test Dept.,
W. A. B. Co.,
101 Herman Ave.,
Wilmerding, Pa.
- Mann, Henry S.,
Dist. Sales Mgr.,
Standard Stoker Co., Inc.,
1903 McCormick Bldg.,
Chicago, Ill.
- Manning, Jas. F., Jr.,
Ass't. R. R. of E.,
Penna. R. R.,
410 S. Atlantic Ave.,
E. E., Pittsburgh, Pa.
- Manson, Arthur J.,
Traction Apparatus Manager,
Westinghouse Electric & Mfg.
Company,
700 Braddock Ave.,
East Pittsburgh, Pa.
- Mantell, W. T.,
Salesman,
Pgh. Screw & Bolt Corp.,
4400 Center Ave.,
Pittsburgh, Pa.
- Margiotti, Chas. J.,
Attorney,
B. R. & P. Ry.,
720 W. Mahoning St.,
Punxsutawney, Pa.
- Marlow, Geo. A.,
Chief Car Inspector,
Penna. R. R.,
575 Broad St. Station,
Philadelphia, Pa.
- Marquis, Geo. E.,
Trainmaster,
P. & L. E. R. R.,
702 Sixth Ave.,
New Brighton, Pa.
- Marshall, Craig W.,
Eastern Sales Mgr.,
Sunbeam Elec. Mfg. Co.,
1720 Grand Cen. Terminal,
New York, N. Y.
- Martin, T. J.,
Asst. Train Master,
Monon Div., P. R. R.,
1412 Fourth St. Ext'n.,
Monongahela, Pa.
- Mason, S. O.,
Foreman,
Westinghouse Air Brake Co.,
Wilmerding, Pa.

- Masterman, T. W.,
Test Engineer,
Westinghouse Air Brake Co.,
1249 McClure Ave.,
East McKeesport, Pa.
- Masters, W. C.,
Bolt, Nut & Rivet Mfg. Assn.
2613 Grant Bldg.,
Pittsburgh, Pa.
- Matchett, H. K.,
238 Grant Ave.,
Bellevue, Pa.
- Matchneer, Wm. W.,
Sales Engineer,
Buckeye Steel Castings Co.,
Columbus, Ohio.
- Mateer, W. H.,
Director of Purchases,
Standard Steel Car Co.,
Butler, Pa.
- Matheny, George W.,
Yard Conductor,
P. & L. E. R. R.,
1808 Jenny Lind Ave.,
McKeesport, Pa.
- Mathis, B. H.,
Treasurer,
Warren Tank Car Co.,
Warren, Pa.
- Matthews, R. J.,
Salesman,
Edgewater Steel Co.,
P. O. Box 249,
Pittsburgh, Pa.
- Mauck, E. A.,
Air Brake Inspector,
Union Railroad,
Box 55,
North Bessemer, Pa.
- Col. Maxfield, H. H.,
S. M. P., Southern Div.,
Penna. Railroad,
402 Pennsylvania Bldg.,
Wilmington, Del.
- Maxwell, R. E.,
Wheel Engineer,
Carnegie Steel Co.,
Carnegie Bldg.,
Pittsburgh, Pa.
- Mayer, L. I.,
Tester,
Westinghouse Air Brake Co.,
Apt. 46, 411 Commerce St.,
Wilmerding, Pa.
- Meehan, C. L.,
Asst. Train Master,
Aliquippa & Southern R. R.,
1929 Irwin St.,
Aliquippa, Pa.
- Megogney, Frank M.,
Statistician,
P. & L. E. R. R.,
624 P. & L. E.,
Terminal Bldg.,
Pittsburgh, Pa.
- Meinert, Henry,
Locomotive Inspector,
Montour Railroad,
11 Geneva St.,
Etna, Pa.
- Merscher, John,
Foreman Car Repairs,
P. & L. E. R. R.,
348 Woodward Ave.,
McKees Rocks, Pa.
- Mertz, G. H.,
Freight Agt., M. C. R. R.,
4035 Murray Ave.,
Pittsburgh, Pa.
- Mertz, Jacob J.,
Gang Foreman Car Dept.,
P. & L. E. R. R.,
Glenwillard, Pa.
- Meyer, Wendel J.,
Chief Engineer,
O. C. Duryea Corp'n.,
P. O. Box 56,
Butler, Pa.
- Milby, T. A.,
Investigator for the State
Auditor General of Pa.,
369 Grace St.,
Pittsburgh, Pa.
- Miles, Harry E.,
Yard Master,
Union Railroad Co.,
5427 Claybourne St.,
Pittsburgh, Pa.
- Miles, W. E.,
President,
Miles & Co., Inc.,
Dubois, Pa.

- Millar, Clarence W.,
 Mgr. Order Dept.,
 Pressed Steel Car Co.,
 McKees Rocks, Pa.
- Miller, George,
 Piece-work Inspector,
 P. & L. E. R. R. Co.,
 3228 Sacramento Ave.,
 Pittsburgh, Pa.
- Miller, J. Alfred,
 Gen. Mgr. of Sales,
 Vanadium Corp. of America,
 Oliver Building,
 Pittsburgh, Pa.
- Miller, J. F.,
 Sales Engineer,
 Carnegie Steel Co.,
 Frick Bldg. Annex,
 Pittsburgh, Pa.
- Miller, John,
 Gen. Car Fore., Montour
 Railroad,
 5127 Blair St.
 Hazelwood, Pa.
- Miller, L. L.,
 Labor Foreman,
 P. & L. E. R. R. Co.,
 2900 Merwyn Ave.,
 Pittsburgh, Pa.
- Miller, R. H.,
 General Freight Agent,
 Pennsylvania Railroad,
 Pennsylvania Station,
 Pittsburgh, Pa.
- Miller, W. H.,
 Dining Car Agent,
 Penna. R. R.,
 Fort Pitt Hotel,
 Pittsburgh, Pa.
- Milliken, C. C.,
 Traffic Dispatcher,
 Universal Portland Cement Co.,
 517 Frick Bldg.,
 Pittsburgh, Pa.
- Milliken, I. H.,
 Vice Pres., The McConway &
 Torley Co.,
 48th St. and A. V. Ry.,
 Pittsburgh, Pa.
- Mills, C. C.,
 Vice Pres. & Gen. Manager,
 Unity Railways Co.,
 619 Union Trust Bldg.,
 Pittsburgh, Pa.
- Minnick, F. G.,
 Special Asst. to Vice Pres't.,
 P. & L. E. R. R.,
 308 Lincoln Ave.,
 Bellevue, Pa.
- Misklow, C. J.,
 C. C. to Asst. Train Master,
 P. & W. Va. Ry.,
 2 McMunn Ave.,
 Crafton, Pa.
- Misner, George W.,
 Westinghouse Air Brake Co.,
 304 Arlington Ave.,
 East McKeesport, Pa.
- Mitchell, Frank K.,
 Signal Insp'r., P. & L. E. R. R.,
 1218 House Bldg.,
 Pittsburgh, Pa.
- Mitchell, J. G.,
 Sub-Storekeeper,
 Union Railroad,
 3 Duquesne Boulevard,
 Duquesne, Pa.
- Mitchell, J. Wallace,
 Salesman,
 Pitts. Forge & Iron Co.,
 1306 C. of Commerce Bldg.,
 Pittsburgh, Pa.
- Mitchell, W. S.,
 Signal Inspector,
 P. and L. E. R. R.,
 540 First St.,
 Beaver, Pa.
- Mogan, John M.,
 General Yard Master,
 P. & L. E. R. R.,
 119 Overbrook Blvd.,
 Pittsburgh, Pa.
- Mohn, Louis,
 District Manager,
 Garlock Packing Co.,
 Maloney Bldg.,
 Pittsburgh, Pa.
- Moir, W. B.,
 Chief Car Insp'r.,
 Penna. Railroad,
 521 Penna. Station,
 Pittsburgh, Pa.
- Molyneaux, Dawes S.,
 Sales Engineer,
 Ft. Pitt Spring Co.,
 Box 917,
 Pittsburgh, Pa.

- Monks, J. J.,
Freight Traffic Manager,
P. & L. E. R. R.,
Pittsburgh, Pa.
- Montgomery, J. L.,
C. C., Accounting Dept.,
Union R. R.,
1418 Carnegie Bldg.,
Pittsburgh, Pa.
- Montgomery, Wm. J.,
Railway Representative,
The Sherwin Williams Co.,
601 Canal Road,
Cleveland, Ohio
- Moody, M. R.,
Mfg. Engineer,
Westinghouse E. & M. Co.,
1031 Macon St.,
Pittsburgh, Pa.
- Moore, Donald O.,
Mgr. of Traffic Div.,
Chamber of Commerce,
Chamber of Com. Bldg.,
Pittsburgh, Pa.
- Moore, Frank,
Pres't. Pgh. Malleable Iron Co.,
1406 Clark Bldg.,
Pittsburgh, Pa.
- Moore, Ray L.,
Asst. Superintendent,
B. R. & P. Ry.,
Punxsutawney, Pa.
- Moreland, Evan L.,
Machine Shop Foreman,
Montour Railroad,
1215 Hiland Ave.,
Coraopolis, Pa.
- Morgan, A. L.,
Supt. on Special Duty,
Penna. R. R. System,
24 Maple Ave.,
Woodlawn,
Wheeling, W. Va.
- Morris, J. H.,
Fuel Sup'vr., B. R. & P. Ry.,
704 E. Mahoning St.,
Punxsutawney, Pa.
- Morris, J. M.,
Traffic Manager,
National Tube Co.,
1922 Frick Bldg.,
Pittsburgh, Pa.
- Morrison, W. W.,
Chief Engineer,
Pittsburgh & Shawmut
Railroad,
Kittanning, Pa.
- Morrow, Robt. T.,
Asst. to Vice Pres.,
Penna. System,
401 Roup Ave.,
Pittsburgh, Pa.
- Morrow, Wilson,
Division Engineer,
B. R. & P. Ry.,
113 W. DuBois Ave.,
DuBois, Pa.
- Morse, J. W.,
Asst. T. M. & R. F. of E.,
Penna. Railroad,
P. O. Box 892,
Youngwood, Pa.
- Moses, Graham Lee,
Elec. Engr., Westinghouse
Elec. & Mfg. Co.,
407 Franklin Ave.,
Wilksburg, Pa.
- Moss, J. M.,
Sales Manager,
Pgh. Testing Laboratory,
Box 1115,
Pittsburgh, Pa.
- Moulis, F. J.,
Cashier, B. R. & P. Ry.,
1222 Voskamp St.,
N. S., Pittsburgh, Pa.
- Mourer, Charles W.,
Special Work,
Pressed Steel Car Co.,
148 Taylor Ave.,
Beaver, Pa.
- Moxey, Arthur C.,
Sales Representative,
Butler Consolidated Coal Co
311 W. Cunningham St.,
Butler, Pa.
- Meyer, Oscar G. A.,
Engineer, Rieck-McJunkin
Dairy Co.,
2236 Lutz Ave.,
Mt. Oliver Sta., Pgh., Pa.

- Muck, Joseph,
Crane Director,
Pressed Steel Car Co.,
328 Journal St.,
West End,
Pittsburgh, Pa.
- Muir, Robert Y.,
Master Car Builder,
P. & W. Va. Ry. Co.,
2431 Craftmont Ave.,
Crafton, Pa.
- Mulvey, John I.,
Traffic Manager,
Hubbard & Co.,
6301 Butler St.,
Pittsburgh, Pa.
- Munn, Alex D.,
First Aid Inspector,
P. & L. E. R. R.,
Glenwillard, Pa.
- Murphy, Daniel,
Yardmaster, P. & L. E. R. R.,
124 Stewart St.,
Mt. Oliver Sta.,
Pittsburgh, Pa.
- Murray, Donald,
President,
Murray Safety Sling Co.,
1015 South Ave.,
Wilkinsburg, Pa.
- Murray, James S.,
Mfg. Agent,
Goddard & Goddard, Inc.,
392 Hazel Drive,
Mt. Lebanon, Pa.
- Murray, M. H.,
Salesman,
United Oil Co.,
906 Steuben St.,
Pittsburgh, Pa.
- Murray, Thomas,
Freight Conductor,
P. & L. E. R. R.,
601 Atlantic Ave.,
McKeesport, Pa.
- Muse, Thos. Charles,
Traveling Car Agent,
P. & L. E. R. R.,
253 Fourth St.,
Beaver, Pa.
- Myers, Arnold,
R. R. Equip't. Insp'r.,
Carnegie Steel Co.,
R. F. D., 1 Box 338,
Homestead, Pa.
- Myers, Bernard E.,
Ass't. Pass. Train Master,
Penna. R. R.,
7423 Penfield Place,
Pittsburgh, Pa.
- Myers, R. C.,
Storekeeper,
Monongahela Ry. Co.,
Brownsville, Pa.
- Myers, Walter H.,
Chief Clerk to Mech. Supt.,
Montour R. R. Co.,
P. O. Box 161,
West Bridgewater, Pa.
- Myers, Wm. F.,
Pressed Steel Car Co.,
326 Woodward Ave.,
West Park,
McKees Rocks, Pa.
- McAbee, W. S.,
Vice Pres. & Gen. Supt.,
Union R. R.,
5239 Gertrude St.,
Pittsburgh, Pa.
- McBeth, P. C.,
Sales Manager,
The Niles Tool Works Co.,
Grant Bldg.,
Pittsburgh, Pa.
- McCabe, James F.,
Train Dispatcher,
P. & L. E. R. R.,
319 Chartiers Ave.,
McKees Rocks, Pa.
- McCandless, Geo. W.,
Secy & Treas., The
McConway & Torley Co.,
48th St. and A. V. Ry.,
Pittsburgh, Pa.
- McCarthy, F. W.,
Supt. Car Operation,
Pittsburgh Railways Co.,
435 Sixth Ave.,
Pittsburgh, Pa.

- McCarthy, J. T.,
Ass't. Freight Train Master,
Pennsylvania Railroad,
82 Duncan Ave.,
Crafton, Pa.
- McCartney, John H.,
3737 88th St.,
Jackson Heights, L. I., N. Y.
- McCauley, Wm.,
R. F. of E. Penna. System,
28 Kerr St.,
Uniontown, Pa.
- McClintock, John D.,
Manager, Injector Dept.,
Wm. Sellers & Co., Inc.,
1600 Hamilton St.,
Philadelphia, Pa.
- McCloskey, J. C.,
Clerk, Union R. R. Co.,
2227 Woodstock Ave.,
Swissvale, Pa.
- McComb, R. J.,
Sales Manager,
Woodings Forge & Tool Co.,
Verona, Pa.
- McConnell, Allen L.,
Car Distributor,
P. & L. E. R. R.,
127 Fitler St
Pittsburgh, Pa.
- McConnell, Frank P.
Yardmaster,
P. & L. E. R. R.,
210 Eleanor St.,
S. S., Pittsburgh, Pa.
- McConway, Wm., Jr.,
President, The
McConway & Torley Co.,
48th St. and A. V. Ry.,
Pittsburgh, Pa.
- McCornish, W. C.,
Gang Foreman,
Penna. Railroad,
Second Ave.,
Conway,
Beaver Co., Pa.
- McCoy, James M.,
Sales Engineer,
Lonsdale Mfg. Co.,
7716 Tuscarora St.,
Pittsburgh, Pa.
- McCrea, James G.,
Brakeman,
Pennsylvania Railroad,
611 Pitt St.,
Wilkinsburg, Pa.
- McCready, Arthur,
Gang Foreman,
Union Railroad,
547 Ninth Ave.,
Munhall, Pa.
- McCuen, J. T.,
Salesman, Metch & Merry-
weather Machinery Co.,
Clark Bldg.,
Pittsburgh, Pa.
- McCune, J. C.,
Asst. Director Engineering,
Westinghouse Air Brake
Company,
Wilmerding, Pa.
- McDonald, John A.,
119 Carson St.,
S. S., Pittsburgh, Pa.
- McElravy, J. W.
Terminal Agent,
P. & L. E. R. R.,
Terminal Annex Bldg.,
S. S., Pittsburgh, Pa.
- McGaw, William L.,
Shop Foreman,
McKeesport Connecting R. R.,
1407 Manor Ave.,
McKeesport, Pa.
- McGeorge, D. W.,
Asst. Secretary,
Edgewater Steel Co.,
P. O. Box 249,
Pittsburgh, Pa.
- McGinley, T. A.,
President,
The Duff-Norton Mfg. Co.,
P. O. Box 555,
N. S., Pittsburgh, Pa.
- McGinnis, Thomas P.
District Sales Manager,
The Pyle-National Co.,
420 Oliver Bldg.,
Pittsburgh, Pa.
- McGowan, Chas. H.,
Draftsman, P. S. C. Co.,
415 Jefferson Ave.,
Bellevue, Pa.

- McHugh, C. A.,
Asst. Trainmaster,
P. & W. Va. Ry.,
21 Cannon St.,
Craifton, Pa.
- McIlwain, J. P.,
Freight Agent,
P. & L. E. R. R.,
63 Greenbush Street,
Pittsburgh, Pa
- McIntyre, R. C.,
Asst. Master Mechanic,
Union Railroad,
403 Braddock Ave.,
Pittsburgh, Pa
- McKalip, James C.,
General Auditor,
B. & L. E. R. R. Co.,
P. O. Box 456,
Pittsburgh, Pa
- McKedy, H. V.,
Rep., Railway Dept.,
The Patterson, Sargent Co.,
30 Church St.,
New York, N. Y.
- McKee, Frederick C.,
Pres., Winfield R. R.,
2215 Oliver Bldg.,
Pittsburgh, Pa
- McKee, S. Frank,
Asst. to Gen. Mgr.,
Pressed Steel Car Co.,
McKees Rocks, Pa
- McKelvey, J. E.,
Asst. Gen. Mgr. Sales,
Neeley Nut & Bolt Co.,
21st and Wharton Sts.,
Pittsburgh, Pa.
- McKenzie, Edward F.,
A. B. Instructor, Penna. R. R.,
7934 Susquehanna St.,
Pittsburgh, Pa.
- McKinley, Archie,
Chief Motive Power Insp't'r,
P. & L. E. R. R.,
613 Broadway Ave.,
McKees Rocks, Pa
- McKinstry, C. H.,
Research Engineer,
W. A. B. Co.,
46 Sprague St.,
Wilmerding, Pa.
- McKinzie, Edward,
General Yardmaster,
P. & W. Va. Ry.,
R. D. 8, Craifton, Pa.
- McLain, J. E.,
Manager of Sales,
Bethlehem Steel Co.,
1807 Oliver Bldg.,
Pittsburgh, Pa.
- McLaughlin, Howard B.,
R. F. of E.,
P. & L. E. R. R.,
3021 Ashlyn St.,
Corliss Station,
Pittsburgh, Pa
- McLaughlin, L. S.,
Car Inspector,
P. & L. E. R. R.,
R. D. No. 2,
Beaver Falls, Pa
- McMahon, H. R.,
President,
Standard Steel Spring Co.,
843 Fourth Ave.,
Coraopolis, Pa.
- McManus, Charles J.,
Gang Foreman,
Penna. Railroad System,
3628 Liberty Avenue,
Pittsburgh, Pa.
- McMillan, A. P.,
Boiler Foreman,
P. & W. Va. Ry.,
928 Western Ave.,
N. S., Pittsburgh, Pa.
- McMillan, F. C.,
Office Trainmaster,
P. & L. E. R. R.,
1043 Biltmore Ave.,
South Hills Branch,
Pittsburgh, Pa.
- McMullen, Clark E.,
Inspector Transportation,
P. & L. E. R. R. Co.,
Maple St. Extension,
Coraopolis, Pa.
- McMurray, Arthur E.,
Chief Statistician,
P. & L. E. R. R.,
Pittsburgh, Pa.

McNamee, William W.,
District Manager,
Briggs & Turivas Co.,
41 Marion St.,
Crafton, Pa

McNaughton, W. H.,
Passenger Conductor,
B. R. & P. Ry.,
196 Crescent Ave.,
Buffalo, N. Y.

McNulty, A. P.,
Car Distributor,
P. & L. E. R. R.,
2950 Voelkel Avenue,
Dormont, Pittsburgh, Pa

McPherson, A. R.,
Trainmaster,
Montour Railroad,
Ridge Ave.,
Coraopolis, Pa

McQuillen, J. J.,
President,
Universal Packing Corp.,
108 Smithfield St.,
Pittsburgh, Pa

McQuiston, J. C.,
Advertising Manager,
Westinghouse Elec. &
Mfg. Co.,
East Pittsburgh, Pa.

Nagel, James,
Superintendent Transfer,
Montour Railroad,
Ferree St.,
Coraopolis, Pa.

Nannah, F. J.,
Engr. of Construction,
P. & L. E. R. R.,
Pittsburgh, Pa.

Nash, R. L.,
Test Engineer,
Westinghouse Air Brake Co.,
173 Penwood Ave.,
Wilkinsburg, Pa.

Neal, E. J.,
Piece-work Clerk &
Estimator,
Pressed Steel Car Co.,
1176 Dohrman St.,
Stowe Township,
McKees Rocks, Pa.

Neal, O. H.,
Eastern Sales Manager,
Union Asbestos & Rubber
Company,
30 Church St.,
New York, N. Y

Neff, John P.,
Vice President,
American Arch. Co.,
17 E 42nd St.,
New York, N. Y

Nelson, W. M.,
Supervisor, Air Brakes,
B. R. & P. Ry.,
12 Kent Boulevard,
Salamanca, N. Y

Ness, H. S.,
Freight Agent,
B. R. & P. Ry.,
N. S., Pittsburgh, Pa

Nessle, J. B.,
Traffic Mgr.,
P. & L. E. R. R.,
P. & L. E. Term. Bldg.,
Pittsburgh, Pa

Nethken, H. W.,
Vice President,
Pgh. & West Va. R. R.,
405 Wabash Bldg.,
Pittsburgh, Pa

Nichol, W. K.,
Chief Clerk to Gen'l Supt.,
B. R. & P. Ry.,
15 Rumbarger Ave.,
DuBois, Pa

Niel, Ed. A.,
Freight Traffic Manager,
B. R. & P. Ry.,
155 W. Main St.,
Rochester, N. Y

Nieman, Charles J.,
Secretary-Treasurer,
Penn Iron & Steel Co.,
Creighton, Pa

Nieman, H. L.,
Gang Foreman,
P. & L. E. R. R.,
208 Copeland St.,
McKees Rocks, Pa

Noble, Jesse A.,
Sup'r. Bridges & Bldgs.,
P. & L. E. R. R.,
1643 Broadway,
McKees Rocks, Pa

- Noonan, W. T.,
President,
B. R. & P. Ry. Co.,
155 West Main St.,
Rochester, N. Y.
- Nordfelt, H. C.,
Sales Engineer,
Continental Sales & Engrg. Co
Oliver Bldg.,
Pittsburgh, Pa.
- Norris, J. L.,
R. F. of E., B. & O. R. R.,
4818 Chatsworth St.,
Pittsburgh, Pa.
- Nutt, Col. H. C.,
Pres. & Gen. Mgr.,
Monongahela Rwy. Co.,
Century Bldg.,
Pittsburgh, Pa.
- Oberlin, A. C.,
Auditor,
Schaefer Equipment Co.,
Koppers Building,
Pittsburgh, Pa.
- Obermeier, L. J.,
Machinist,
Penna. R. R. System,
722 9th St.,
Pitcairn, Pa.
- O'Boyle, Charles M.,
President,
Royal Railway Supply Co.,
90 West St.,
New York, N. Y.
- O'Brien, Martin J.,
Pres., Martin J. O'Brien Co.,
Inc.,
1607 Union Bank Bldg.,
Pittsburgh, Pa.
- O'Connor, C. D.,
Supt. Transportation,
Vesta Coal Co.,
Pittsburgh, Pa.
- O'Connor, M. J.,
Rep., Dearborn Chemical Co.,
618 Farmers Bank Bldg.,
Pittsburgh, Pa.
- Ogden, F. A.,
General Freight Agent,
Jones & Laughlin Steel Co.,
Pittsburgh, Pa.
- Ogden, Geo. D.,
Asst. Vice President,
Penna. Railroad,
Pennsylvania Sta.,
New York, N. Y.
- O'Leary, Jeremiah J.,
Machinist, Penna. System,
132 Fourth St.,
Oakmont, Pa.
- O'Malley, J. N.,
Foreman, B. & O. R. R. Co.,
5130 Second Ave.,
Pittsburgh, Pa.
- Orbin, Geo. N.,
Retired,
Engineman, B. & O. R. R.,
2945 Glenmore Ave.,
Dormont, Pittsburgh, Pa.
- Orchard, Chas.,
Special Agent,
Traffic Dept., Carnegie
Steel Co.,
Carnegie Buldg.,
Pittsburgh, Pa.
- Orr, D. K.,
Superintendent,
The Monongahela Ry. Co.,
Brownsville, Pa.
- Osborne, H. C.,
Supvr. of Water Supply,
P. & L. E. R. R.,
250 Wilson Ave.,
Beaver, Pa.
- Osborne, Wm. J.,
Gen. Elec. Fore., Union R. R.,
8 Norman St.,
Duquesne, Pa.
- Oskin, Wm.,
Ass't. Foreman,
W. A. B. Co.,
1250 Broadway St.,
East McKeesport, Pa.
- O'Sullivan, John J.,
Pipe Fitter, P. & L. E. R. R.,
1130 Wayne Ave.,
McKees Rocks, Pa.
- O'Toole, J. L.,
Ass't. to Gen. Mgr.,
P. & L. E. R. R.,
Pittsburgh, Pa.

- O'Toole, Thomas J.,
Clerk, B. & O. R. R. Co.,
5138 Gloster St.,
Pittsburgh, Pa.
- Owen, A. T.,
Supt. Transportation,
Reading Company,
Reading Terminal,
Philadelphia, Pa.
- Pacey, E. H.,
President,
Pittsburgh Welding Corp.,
33 Water St.,
Pittsburgh, Pa.
- Painter, Chas. Leroy,
Engr., West E. & M. Co.,
614 Third St.,
Pittsairn, Pa.
- Painter, Jos.,
Railway Equipment,
3204 Juliet St.,
Pittsburgh, Pa.
- Paisley, F. R.,
Inspecting Engineer,
P. & L. E. R. R. Co.,
1111 Stanford Road,
N. S., Pittsburgh, Pa.
- Palmer, E. A.,
Traction Apparatus Sales,
Westinghouse Elec. &
Mfg. Company,
564 East End Ave.,
Pittsburgh, Pa.
- Partington, Joshua A.,
225 Cornell Ave.,
Bellevue Branch,
Pittsburgh, Pa.
- Paschold, Curtis H.,
Claim Agent,
Legal Dept.,
Penna. R. R.,
417 Chestnut Rd.,
Sewickley, Pa.
- Passmore, H. E.,
5668 Darlington Road,
Pittsburgh, Pa.
- Passmore, H. E., Jr.,
National Tube Co.,
Frick Bldg.,
Pittsburgh, Pa.
- Pastre, Harry A.,
Supervisor District,
Offices, Elliott Co.,
718 Frick Bldg.,
Pittsburgh, Pa.
- Patterson, J. E.,
"Retired" Loco. Engr.,
U. R. R.,
7236 McClure Ave.,
Swissvale, Pa.
- Patterson, John W.,
District Sales Manager,
Western Wheeled Scraper Co.,
324 Fourth Ave.,
Pittsburgh, Pa.
- Patton, William T.,
Head of Time Study Dept.,
Westinghouse Air Brake Co.,
Wilmerding, Pa.
- Paul, Lesley C.,
Transportation Section,
W. E. & Mfg. Co.,
159 Woodside Road,
Forest Hills Boro.,
Wilksburg, Pa.
- Payne, H. A.,
Credit Manager,
Pgh. Screw & Bolt Corp.,
P. O. Box 752,
Pittsburgh, Pa.
- Peacock, W. W.,
Railway Products Co.,
1918 Grant Bldg.,
Pittsburgh, Pa.
- Pehrson, A. K.,
Mech. Engr.,
Pressed Steel Car Co.,
McKees Rocks, Pa.
- Peiffer, C. E.,
Master Car Builder,
B. R. & P. Ry.,
129 West Long Ave.,
DuBois, Pa.
- Penrod, Homer F.,
Yardmaster,
P. & L. E. R. R.,
231 South Ninth St.,
Connellsville, Pa.
- Penton, John A.,
President, The Penton Pub. Co.,
Cleveland, Ohio

- Peoples, Jas. S.,
Freight T. M., P. R. R. Co.,
2610 N. Sixth St.,
Harrisburg, Pa.
- Perkins, Chas. F.,
General Manager,
Davis Brake Beam Co.,
Box 982,
Johnstown, Pa.
- Perkins, E. M.,
Arch Machinery Co.,
820 Y. M. C. A., Wood St.,
Pittsburgh, Pa.
- Perry, W. E.,
Special Agent,
Central Region,
Penna. R. R. System,
Room 404, Penna. Sta.,
Pittsburgh, Pa.
- Person, G. H.,
Signal Supervisor,
B. R. & P. Ry.,
117 Scribner Ave.,
DuBois, Pa.
- Peterson, William,
Yardmaster,
P. & L. E. R. R.,
1404 Pirl Street,
McKeesport, Pa.
- Pfrom, E. L.,
Asst. Suprv. of Track,
P. & L. E. R. R.,
745 Mary Street,
McKees Rocks, Pa.
- Pickard, S. B.,
Chief Electrician,
P. & L. E. R. R.,
604-A Broadway,
McKees Rocks, Pa.
- Pillar, Michael,
Piece Work Inspector,
P. & L. E. R. R.,
206 Jane St.,
McKees Rocks, Pa.
- Platt, J. G.,
Pres. and Gen. Manager,
Hunt-Spiller Mfg. Corp.,
383 Dorchester Ave.,
So. Boston, Mass.
- Poffenberger, J. C.,
Superintendent,
Pennsylvania Railroad,
Fayette Title & Trust
Co. Bldg.,
Uniontown, Pa.
- Pollock, J. H.,
Boiler Foreman,
Montour Railroad,
Fifth Ave.,
Coraopolis, Pa.
- Porter, H. T.,
Chief Engineer,
B. & L. E. R. Co.,
Greenville, Pa.
- Porter, P. P.,
Foreman, Air Brake Dept.,
Montour Railroad,
134 Jackson St.,
Bellevue, Pa.
- Posteraro, S. F.,
Frt. Cashier,
B. & O. R. R.,
Grant and Water Sts.,
Pittsburgh, Pa.
- Postlethwaite, C. E.,
Asst. Vice President,
Pressed Steel Car Co.,
55 Broad St.,
New York, N. Y.
- Poznanski, Carl L.,
General Manager's Dept.,
Pressed Steel Car Co.,
817 Woodward Ave.,
McKees Rocks, Pa.
- Prentice, L. V.,
Asst. Station Master,
P. & L. E. R. R.,
258 Southern Ave.,
Pittsburgh, Pa.
- Prince, Albert,
Asst. Foreman,
P. & L. E. R. R.,
3043 Glenmawr Ave.,
Corliss Station,
Pittsburgh, Pa.
- Pringle, Arthur D.,
Supvr. Wage Schedule,
Monongahela Railway,
609 Water St.,
South Brownsville, Pa.

Pringle, F. D.,
Surgeon,
B. R. & P. Ry.,
205 So. Penn St.,
Punxsutawney, Pa.

Pringle, H. C.,
Supt., Mon. Con. R. R.,
McCully St. & Marlin Drive,
Mt. Lebanon, Pittsburgh, Pa.

Pringle, J. L.,
Trainmaster,
Penna. Railroad,
115 Delafield Ave.,
Aspinwall, Pa.

Pringle, P. V.,
Commercial Engineer,
Westinghouse Air Brake Co.,
811 South Ave.,
Wilkinsburg, Pa.

Prouty, Eugene,
Service Engineer,
Standard Stoker Co., Inc.,
210 West Eighth St.,
Erie, Pa.

Provost, S. W.,
Representative,
Am. Locomotive Co.,
2116 Farmers Bank Bldg.,
Pittsburgh, Pa.

Pugh, Clifford, F.,
Ky. Watch Inspector,
Pugh Bros.,
House Bldg.,
Pittsburgh, Pa.

Pugh, William,
Asst. Gen. Freight Agent,
B. R. & P. Ry.,
155 W. Main St.,
Rochester, N. Y.

Purnell, Charles G.,
Inspector, Metallurgical Dept.,
Carnegie Steel Co.,
Frick Bldg., Annex,
Pittsburgh, Pa.

Pye, David W.,
President,
Tuco Products Corp'n.,
30 Church St.,
New York, N. Y.

Rabold, W. E.,
Chief Clerk, P. R. R.,
366 Lehigh Ave.,
E. E., Pittsburgh, Pa.

Ragner, Geo. O.,
Secretary,
Beck, Riley & Hall Equip. Co.,
458 Union Trust Bldg.,
Pittsburgh, Pa.

Ralston, John A.,
Mech. Engr., U. R. R. Co.,
Frick Annex,
Pittsburgh, Pa.

Rambo, Jay B.,
Train Master,
Long Island Railroad,
19 Pamnanake Ave.,
Babylon,
Long Island, N. Y.

Rankin, B. B.,
Asst. Gen. Auditor,
P. & L. E. R. R.,
1502 Park Blvd.,
Dormont,
Pittsburgh, Pa.

Raser, Geo. B.,
5614 Walnut St.,
E. E., Pittsburgh, Pa.

Rauschart, E. A.,
Mech. Supt., Montour R. R.,
Coraopolis, Pa.

Raymer, I. S.,
Signal Engineer,
P. & L. E. R. R.,
959 Fourth Ave.,
Beaver, Pa.

Read, A. A.,
Duquesne Slag Products Co.,
806 Diamond Bank Bldg.,
Pittsburgh, Pa.

Read, Harry J.,
Assistant Cashier,
P. & L. E. R. R.,
80 Wyoming Street,
Pittsburgh, Pa.

Ream, A. H.,
S. M. P. & E.,
P. & S. R. R.,
Brookville, Pa.

- Reardon, M. J.,
Gen. Y. M., P. & L. E. R. R.,
638 Fifth Ave.,
Coraopolis, Pa.
- Record, J. Fred,
Supt. of Production,
Westinghouse Air Brake
Company,
Wilmerding, Pa.
- Reddick, Warren E.,
Clerk,
P. & L. E. R. R.,
1114 Faulkner St.,
Corliss Sta.,
Pittsburgh, Pa.
- Redding, P. E.,
Sales Engineer,
Johns-Manville, Inc.,
Westinghouse Bldg.,
Pittsburgh, Pa.
- Redding, R. D.,
General Foreman,
P. & L. E. R. R. Co.,
Campbell, Ohio
- Reed, J. B.,
Treas. & Tax Collector,
Stowe Township,
550 Broadway,
McKees Rocks, Pa.
- Rees, Harry,
Master Mechanic,
B. & O. Shops,
Akron, Ohio
- Reeves, George,
Fore. Electrical Dept.,
Ft. Pitt Malleable Iron Co.,
330 Woodward Ave.,
McKees Rocks, Pa.
- Regan, W. J.,
Mechanical Engineer,
The McConway-Torley Co.,
48th St. & A. V. Ry.,
Pittsburgh, Pa.
- Reid, Samuel,
Inspecting Engineer,
P. & L. E. R. R.,
411 Eleventh St.,
Beaver Falls, Pa.
- Reifsnyder, J. W.,
Engineer of Tests,
Pgh. Testing Laboratory,
Stevenson & Locust Sts.,
Pittsburgh, Pa.
- Remensnyder, G. W.,
Salesman,
Colonial Steel Co.,
3438 Delaware Ave.,
N. S., Pittsburgh, Pa.
- Renshaw, W. B.,
Asst. Dist. Engineer,
W. A. B. Co.,
Wilmerding, Pa.
- Rex, Charles E.,
Asst. Engine House Fore.,
Pennsylvania R. R.,
233 Clifton Ave.,
Sharpsburg, Pa.
- Reynolds, D. E.,
Purchasing Agent,
B. & L. E. R. R.,
687 Union Trust Bldg.,
Pittsburgh, Pa.
- Richardson, F. E.,
President,
Pgh. Forge & Iron Co.,
Chamber of Com. Bldg.,
Pittsburgh, Pa.
- Richardson, H. R.,
Suprv. of Wage Schedules,
P. & L. E. R. R.,
Pittsburgh, Pa.
- Richardson, L. C.,
Sales Engineer,
Sunbeam Electric Mfg. Co.,
1720 Grand Central term.,
New York, N. Y.
- Riddle, D. E.,
Traveling Auditor,
Florida East Coast R. R.,
131 King St.,
St. Augustine, Fla.
- Ridgeway, James F.,
Foreman,
P. and L. E. R. R.,
711 Frederick St.,
McKees Rocks, Pa.
- Rieker, H. M.,
Freight Agent,
P. & L. E. R. R.,
23rd Street,
S. S., Pittsburgh, Pa.
- Ritts, Wm. H.,
Steam Engineer,
Spang, Chalfant & Co.,
1 Pine St.,
Etna, Sharpsburg Sta., Pa.

- Rizzo, C. M.,
Agent, P. & W. Va. Ry.,
Box 502,
Castle Shannon, Pa.
- Roan, Harry B.,
Fore., Loco. & Crane Repairs,
Jones & Laughlin Steel Corp.,
658 Franklin Ave.,
Aliquippa, Pa.
- Roberts, A. L.,
International Nickel Co.,
67 Wall St.,
New York, N. Y.
- Robertson, Harold,
Yard Master,
P. & L. E. R. R.,
Dickerson Run, Pa.
- Robinson, R. L.,
Sales Representative,
The American Brake Shoe
and Foundry Co.,
714 Roselawn Ave.,
S. H. B., Pittsburgh, Pa.
- Rodibaugh, J. T.,
Conductor,
P. & L. E. R. R.,
940 Watson St.,
Coraopolis, Pa.
- Rogan, John A.,
Special Engineer,
Pgh. Railways Co.,
Park Way Office,
N. S., Pittsburgh, Pa.
- Roney, H. E.,
Sig. Draftsman,
P. & L. E. R. R.,
3111 College Ave.,
Beaver Falls, Pa.
- Root, E. E.,
Master Mechanic,
D. L. & W. R. R. Co.,
50 North Munn Ave.,
East Orange, N. J.
- Rossell, R. T.,
President, B. & L. E. R. R.,
Union Trust Building,
Pittsburgh, Pa.
- Roth, Philip J.,
P. W. Car Insp'r.,
P. & L. E. R. R.,
312 Anthony St.,
Mt. Oliver Sta.,
Pittsburgh, Pa.
- Roush, Albert S.,
Supt. Telegraph,
P. & L. E. R. R.,
6735 Thomas Blvd.,
Pittsburgh, Pa.
- Rowan, W. R. C.,
Estate Engineer,
Canada Life Assurance Co.,
140 Bigham St.,
Mt. Washington,
Pittsburgh, Pa.
- Rowland, F. S.,
Locomotive Engineer,
B. R. & P. Ry.,
14 Rumbarger Ave.,
DuBois, Pa.
- Rudd, W. B.,
General Engineer,
Union Switch & Signal Co.,
Swissvale, Pa.
- Rumbarger, F. A.,
1847 Koppers Bldg.,
Pittsburgh, Pa.
- Rupp, Edwin S.,
C. C. to Div. Accountant,
B. & O. R. R.,
220 Virginia Ave.,
Mt. Washington,
Pittsburgh, Pa.
- Rush, Benjamin H.,
Material Supervisor,
Montour Railroad,
126 Tecumseh St.,
Pittsburgh, Pa.
- Rushneck, George L.,
Draftsman,
P. & L. E. R. R.,
41 P. & L. E. Annex Bldg.,
Pittsburgh, Pa.
- Ryan, D. W.,
Chief Clerk, Order Dept.,
Ft. Pitt Malleable Iron Co.,
3138 Landis St.,
Pittsburgh, Pa.
- Ryder, Gilbert E.,
Vice President,
The Superheater Co.,
60 East 42nd St.,
New York City.

- Rys, C. F. W.,
Assistant to President,
Carnegie Steel Co.,
517 Carnegie Bldg.,
Pittsburgh, Pa.
- Sable, A. C.,
Boiler Maker,
Pennsylvania Railroad,
2008 Hampton St.,
Swissvale, Pa.
- Salisbury, William,
Trav. Car Insp'r.,
P. & L. E. R. R.,
Box 175,
Newell, Pa.
- Sallinger, Howard H.,
Rate Clerk,
B. & O. R. R. Co.,
3114 Niagara St.,
Oakland, Pittsburgh, Pa.
- Saltic, Thos.,
Melter 5,
Ft. Pitt Malleable Iron Co.,
321 Russellwood Ave.,
McKees Rocks, Pa.
- Sample, W. E.,
Supervisor Loco. Operation,
B. & O. R. R.,
Pittsburgh, Pa.
- Sanders, George,
Gen. Foreman, Mech. Dept.,
Union Railroad,
565 Negley Ave.,
Turtle Creek, Pa.
- Sanders, H. D.,
Clerk, Penna. R. R.,
131 Teece Ave.,
Bellevue, Pa.
- Sanders, Walter C.,
Gen. Mgr., Ry. Div.,
Timken Roller Bearing Co.,
1133 Fulton Road,
Canton, Ohio
- Sandman, A. G.,
Asst. to Chief of M. P.,
& Equip't., B. & O. R. R.,
702 B. & O. Central Bldg.,
Baltimore, Md.
- Sanfillip, P. C.,
Electrical Stockkeeper,
P. & L. E. R. R.,
McKees Rocks, Pa.
- Sattley, E. C.,
Vice Pres.,
The Champion Sales Co.,
604 Chamber of Commerce
Bldg.,
Pittsburgh, Pa.
- Saner, George L.,
Freight Agent,
P. & L. E. R. R.,
McKeesport, Pa.
- Sawyer, R. W.,
Salesman,
Penna. & Ohio Lumber Co.,
2203 Oliver Bldg.,
Pittsburgh, Pa.
- Sayre, Frank N.,
Trainmaster,
Aliquippa & So. R. R.,
112 Orchard St.,
Aliquippa, Pa.
- Schaaf, A. J.,
142 Merrimac St.,
Mt. Washington Station,
Pittsburgh, Pa.
- Schaefer, Frederic,
Schaefer Equipment Co.,
Koppers Bldg.,
Pittsburgh, Pa.
- Schaeffer, F. E.,
Asst. Manager of Sales,
Union Spring & Mfg. Co.,
2001 Clark Building,
Pittsburgh, Pa.
- Schaffer, A. R.,
Steel Chaser,
Pressed Steel Car Co.,
906 Second St.,
McKees Rocks, Pa.
- Schaffer, W. E.,
Back Shop Foreman,
P. & W. Va. Ry.,
242 Boden Ave.,
Carnegie, Pa.
- Schiller, John,
Cond'r., P. & W. Va. R. R.,
7743 Forbes St.,
Pittsburgh, Pa.
- Schiller, William B., Jr.,
Secretary-Treasurer,
Standard Auto-Tite Joints Co.,
1005 Park Bldg.,
Pittsburgh, Pa.

- Schmeltz, Oliver R.,
Salesman,
Arch Machinery Co., Inc.,
Park Building,
Pittsburgh, Pa.
- Schmidt, E. M.,
Yardmaster,
P. & L. E. R. R.,
2732 Queensboro Ave.,
South Hills P. O.,
Pittsburgh, Pa.
- Schmied, Fred J.,
Foreman,
Railway Service & Supply
Corporation,
302 Russelwood Ave.,
McKees Rocks, Pa.
- Schmitt, Raymond F.,
Clerk,
Mon. Con. R. R. Co.,
1714 Hatteras St.,
N. S., Pittsburgh, Pa.
- Schmoll, G. A.,
Sup'vr. Loco. Maintenance,
B. & O. R. R.,
Baltimore, Md.
- Schneider, G. August,
Vice President,
Rees Manufacturing Corp.,
Thomas Boulevard,
Pittsburgh, Pa.
- Schneider, George,
Inspector,
906 Woodward Ave.,
McKees Rocks, Pa.
- Schoen, W. H., Jr.,
Vice President,
Pgh. Knife & Forge Co.,
926 Farmers Bank Bldg.,
Pittsburgh, Pa.
- Schrader, A. P.,
Asst. to Transportation Sales
Manager,
Westinghouse Elec. &
Manufacturing Co.,
East Pittsburgh, Pa.
- Schrecongost, C. P.,
Traffic Mgr.,
Hillman Coal & Coke Co.,
First Nat. Bank Bldg.,
Pittsburgh, Pa.
- Schubert, C. F.,
Car Builder,
Pressed Steel Car Co.,
154 McCoy Road,
McKees Rocks, Pa.
- Schuchman, W. R.,
President,
Homestead Valve Mfg. Co.,
Coraopolis, Pa.
- Schultz, Charles H.,
Distributor,
E. F. Houghton & Co.,
3363 Portola St.,
Pittsburgh, Pa.
- Schultz, Geo. H.,
Coal Agent,
Penna. Railroad,
722 Penna. Station,
Pittsburgh, Pa.
- Schultz, Harry P.,
General Yardmaster,
P. & L. E. R. R.,
2714 Fifth Avenue,
Beaver Falls, Pa.
- Schwer, Leo D.,
Gang Foreman,
Penna. R. R. System,
R. F. D. No. 1,
Verona, Pa.
- Scott, L. M.,
Chief Dispatcher,
Montour Railroad,
Coraopolis, Pa.
- Scull, Joseph W.,
Sales Representative,
Stronach Nail Co.,
Union Bank Bldg.,
Pittsburgh, Pa.
- Seaman, G. W.,
Asst. Traffic Mgr.,
Carnegie Steel Co.,
Carnegie Bldg.,
Pittsburgh, Pa.
- Scarles, E. J.,
Manager,
Schafer Equipment Co.,
Koppers Bldg.,
Pittsburgh, Pa.
- Seibert, D. D.,
Train Master,
Pennsylvania Railroad,
Summit St. Station,
Toledo, Ohio

Seibert, Wm. L.,
Engine House Fore.,
P. & L. E. R. R.,
327 Russellwood Ave.,
McKees Rocks, Pa.

Sciss, W. C.,
Foreman Car Insp'rs.,
P. C. C. & St. L. Ry. Co.,
2786 Zephyr Ave.,
Corliss Station,
Pittsburgh, Pa.

Seley, C. A.,
Consulting Engr.,
Loco. Firebox Co.,
1908 New Straus Bldg.,
310 Michigan Ave.,
Chicago, Ill.

Semethy, Joseph J.,
Asst. Fore., Dept. D. M.,
Westinghouse Air Brake Co.,
Wilmerding, Pa.

Semmer, M. R.,
Sales Instructor,
Air Reduction Sales Co.,
281 Dixon Ave.,
South Hills Branch,
Pittsburgh, Pa.

Seroky, E. A.,
Asst. Shipper,
Fort Pitt Malleable Iron Co.,
838 Russellwood Ave.,
McKees Rocks, Pa.

Severn, A. B.,
Sales Engineer,
A. Stucki Co.,
419 Oliver Bldg.,
Pittsburgh, Pa.

Shaddock, C. E.,
Train Dispatcher,
Aliquippa & Southern R. R.,
1309 McMinn St.,
Aliquippa, Beaver Co., Pa.

Shafer, J. S.,
Safety Inspector,
Union Railroad,
Linden Ave.,
East Pittsburgh, Pa.

Shannon, David E.,
Employment Agt.,
Ft. Pitt Malleable Iron Co.,
412 Grove St.,
McKees Rocks, Pa.

Shannon, Wallace R.,
Train Rules Examiner,
P. & L. E. R. R.,
3111 Pioneer Ave.,
Dormont,
Pittsburgh, Pa.

Sharp, H. W.,
Mechanical Engineer,
6619 Shetland St.,
E. E., Pittsburgh, Pa.

Sharp, James,
M. M., McKeesport Con. R. R.,
Box 297,
Homestead, Pa.

Shaw, George M.,
Representative,
Standard Steel Car Co.,
Box 248,
Baltimore, Md.

Shaw, John,
Roadmaster,
B. R. & P. Ry.,
404 Indiana St.,
Punxsutawney, Pa.

Shea, D. S.,
Supt. Police,
B. R. & P. Ry.,
302 Olive Ave.,
DuBois, Pa.

Sheedy, J. A.,
Supt. Motive Power,
Penna. Railroad,
510 Union Station,
Chicago, Ill.

Sheets, C. L.,
Asst. Freight Trainmaster,
Pennsylvania Railroad,
324 Pennsylvania Station,
Pittsburgh, Pa.

Sheets, Hary E.,
Traffic Manager,
Montour Railroad,
8 Market St.,
Pittsburgh, Pa.

Shellenbarger, Herbert M.,
Com. Engr., W. A. B. Co.,
184 W. Hutchinson Ave.,
Edgewood, Pa.

- Shelly, DeWitt L.,
Shop Engineer,
Westinghouse Air Brake Co.,
353 Marquette Ave.,
Wilmerding, Pa.
- Sheridan, Thos. F.,
Chief Clerk to Supt. M. P.,
P. & L. E. R. R.,
Pittsburgh, Pa.
- Sherrard, H. M.,
Dist. Mo. Power Inspector,
care Master Mech. Office,
Newark, Ohio
- Shirey, Don. B.,
T. M., Union R. R.,
490 Marion Ave.,
Forest Hills Boro.,
Wilkinsburg Sta., Pa.
- Showalter, Joseph,
Boiler Maker Foreman,
Aliquippa & Southern
R. R., 116 Carrol St.,
Aliquippa, Pa.
- Shriver, W. W.,
Air Brake Instructor,
Baltimore & Ohio R. R.,
961 Oakland Ave.,
Price Hill,
Cincinnati, Ohio
- Shuck, Wm. C.,
Salesman, Lockhart Iron &
Steel Company,
P. O. Box 1243,
Pittsburgh, Pa.
- Shull, George S.,
President,
Safety First Supply Co.,
Brady Bldg.,
Pittsburgh, Pa
- Shultz, G. J.,
Gang Fore., Penna. System,
1052 Berg St.,
Johnstown, Pa.
- Sidey, W. J.,
Division Storekeeper,
B. R. & P. Ry.,
132 So. Brady St.,
DuBois, Pa.
- Sieger, Hillard J.,
Yardmaster,
P. & L. E. R. R.,
183 St. Joseph St.,
Mt. Oliver, Pittsburgh, Pa.
- Simmons, William H.,
General Foreman,
P. & L. E. R. R.,
Dawson, Pa.
- Simons, Philip,
Traffic Manager,
Copperwald Steel Co.,
Glassport, Pa.
- Sixsmith, G. M.,
Superintendent,
Pennsylvania Railroad,
1 Eastern Ave.,
Aspinwall, Pa.
- Skuce, Chas. G.,
Chief Clerk to Vice President,
Penna. Railroad,
30 Linshaw Ave.,
Ingram,
Crafton, Pa.
- Sladden, F. T.,
A. G. F. A., P. & L. E. R. R.,
Pittsburgh, Pa.
- Slick, Frank F.,
Asst. Gen. Supt.,
Edgar Thomson Works,
C. S. Co.,
Braddock, Pa.
- Smiley, Lee S.,
Sub-Foreman,
Pressed Steel Car Co.,
1137 Thirteenth St.,
McKees Rocks, Pa.
- Smith, C. J.,
Assistant Agent,
P. & L. E. R. R.,
Market St.,
Elizabeth, Pa.
- Smith, E. E.,
Gen. Passenger Agent,
P. & L. E. R. R.,
Terminal Annex Bldg.,
Pittsburgh, Pa.
- Smith, E. E.,
General Manager,
Scott Haven Coal Co.,
415 Pitt St.,
Wilkinsburg, Pa.
- Smith, E. W.,
Vice President,
Penna. Railroad,
909 Pennsylvania Station,
Pittsburgh, Pa

Smith, F. C.,
Chief Clerk,
P. & L. E. R. R.,
Room 132,
Pittsburgh, Pa

Smith, Frank D.,
Electric Rwy. Div.,
Westinghouse Air Brake Co.,
Wilmerding, Pa.

Smith, Frederic M.,
106 Second St.,
Ellwood City, Pa.

Smith, H. H.,
Traffic Manager,
American Sheet & Tin
Plate Co.,
Frick Bldg.,
Pittsburgh, Pa.

Smith, Homer K.,
Asst. Supt., Ry. & Loco.
Depts.,
Westinghouse Elec. &
Mfg. Co.,
1213 La Clair Ave.,
Swissvale, Pa.

Smith, J. Frank,
Gang Foreman,
Union Railroad,
141 Brown Ave.,
Turtle Creek, Pa.

Smith, John L.,
2060 Summer St.,
Youngstown, Ohio.

Smith, M. A.,
General Manager,
P. & L. E. R. R.,
Pittsburgh, Pa.

Smith, M. A.,
General Manager,
Edgewater Steel Co.,
Box 249,
Pittsburgh, Pa.

Smith, M. S.,
Pur. Agt. & Gen. S. K.,
Monongahela Rwy. Co.,
Brownsville, Pa.

Smith, P. F., Jr.,
Engineer of Motive Power,
P. R. R. System,
P. O. Box 534,
Paoli, Chester Co., Pa.

Smith, Ralph W.,
Renewal Parts Engineer,
Westinghouse E. & M. Co.,
East Pittsburgh, Pa.

Smith, Walter S.,
Gang Foreman,
P. & L. E. R. R.,
Dawson, Pa

Smythe, Chas. T.,
Yard Master,
Mon. Con. R. R. Co.,
56 Hazlewood Ave.,
Pittsburgh, Pa

Snitchurst, Jas. G.,
Engine House Foreman,
Pennsylvania Railroad,
415 Brilliant Ave.,
Aspinwall, Pa

Snodgras, Thomas R.,
Asst. Supervisor,
Mon. Con. Railroad,
3540 Second Ave.,
Pittsburgh, Pa

Snyder, F. I.,
Vice Pres. & General Mgr.,
B. & L. E. R. R. Co.,
Box 456,
Pittsburgh, Pa.

Snyder, H. A.,
Salesman,
American Hoist & Derrick
Company,
Farmers Bank Bldg.,
Pittsburgh, Pa.

Snyder, P. McK.,
Div. Passenger Agt.,
B. R. & P. Ry. Co.,
1927 Morell St.,
N. S., Pittsburgh, Pa

Souders, W. J.,
Route Agent,
American Railway Express
Company,
112 Townsend St.,
Syracuse, N. Y.

Sparks, Hynes,
The Symington Co.,
Asst. Vice President,
Terminal Tower Bldg.,
Cleveland, Ohio.

Spindler, Wm. E.,
Traveling Car Inspector,
P. & L. E. R. R.,
McKeesport, Pa.

- Spinning, Charles F.
335 Fifth Ave.,
Pittsburgh, Pa.
- Spotts, Arthur
Engine House Foreman,
Pennsylvania Railroad,
2025 Pyramid Ave.,
Brentwood, Pa.
- Stackhouse, R. K.,
Gen. Supt. Stations, Transfers
Penna. R. R.,
1636 Broad St. Station
Bldg.,
Philadelphia, Pa.
- Stafford, Saml. G.,
President,
Vulcan Crucible Steel Co.,
Aliquippa, Pa.
- Stamets, Wm. K.,
4026 Jenkins Arcade,
Pittsburgh, Pa.
- Stamm, B. B.,
410 McKinley Ave.,
Butler, Pa.
- Stanford, E. R.,
Service Engineer,
The Superheater Co.,
343 Parker St.,
Buffalo, N. Y.
- Stanyard, C. S.,
Ticket Agent,
P. & L. E. R. R.,
McKeesport, Pa.
- Stark, F. H.,
Retired,
702 Main St.,
Coraopolis, Pa.
- Stearns, Kenneth R.,
Railway Engineer,
Westinghouse E. & M. Co.,
415 Lamar St.,
Wilkinsburg, Pa.
- Stebler, W. J.,
Vice President,
Conley Tank Car Co.,
Oliver Building,
Pittsburgh, Pa.
- Steele, I. H.,
C. C. to F. C. Agent,
P. & L. E. R. R.,
155 Ulysses St.,
Mt. Washington, Sta.,
Pittsburgh, Pa.
- Steen, W. E.,
District Storekeeper,
P. & O. R. R.,
B. & O. Depot,
Pittsburgh, Pa.
- Steigerwalt, Robert W.,
Inspecting Engineer,
Carnegie Steel Co.,
Carnegie Bldg.,
Pittsburgh, Pa.
- Stephen, James,
Foreman, Carpenter Shop,
Monroeville Railroad,
620 Vine St.,
Coraopolis, Pa.
- Stephensky, Jules,
Air Brake Inspector,
Union Railroad,
R. D. 1,
Turtle Creek, Pa.
- Sterling, C. C.,
Engine House Fore.,
Union R. R.,
339 Albert St.,
Turtle Creek, Pa.
- Stevens, L. V.,
President,
Fort Pitt Stoker Co.,
35 Water St.,
Pittsburgh, Pa.
- Stevens, R. R.,
Draft Gear Engineer,
Westinghouse Friction
Draft Gear Co.,
5 Elmore Road,
Wilkinsburg, Pa.
- Stevenson, Richard,
Storekeeper,
P. & L. E. R. R.,
Newell, Pa.
- Stewart, L. R.,
R. F. of E.,
Pennsylvania Railroad,
1051 W. Exchange St.,
Akron, Ohio.
- Stewart, W. W.,
Sales Manager,
Koppel Industrial Car &
Equipment Co.,
1901 Farmers Bank Bldg.,
Pittsburgh, Pa.

Stiles, Lawson, A.,
Baggage Agent,
P. & L. E. R. R.,
P. & L. E. Terminal,
Pittsburgh, Pa.

Stillwagon, Charles K.,
Service Engineer,
Davis Brake Beam Co.,
R. D. 5, Box 67,
Johnstown, Pa.

Stilwell, K. E.,
Asst. Service Manager
The Superheater Co.,
1215 W. Water St.,
Elmira, N. Y.

Stine, D. H.,
Asst. R. F. of E.,
Penna. R. R. System,
(Allegheny Shops),
N. S., Pittsburgh, Pa.

Stiver, Joseph R.,
Conductor,
B. R. & P. Ry.,
104 Cypress St.,
Punxsutawney, Pa.

Stoecker, P. J.,
Pittsburgh Steel Co.,
Union Trust Bldg.,
Pittsburgh, Pa.

Stoeck, Arthur L.,
Gang Fore., Car Dept.
Union Railroad Co.,
Unity, Pa.

Stoffregen, Louis E.,
Draftsman,
P. & L. E. R. R.,
213 Grandview Ave.,
Mt. Washington,
Pittsburgh, Pa.

Stokes, A. H.,
Asst. Superintendent,
B. R. & P. Ry.,
111 Belmont Ave.,
Punxsutawney, Pa.

Stonick, A. E.,
Y. M. Union R. R.,
1308 Franklin Ave.,
Wilkinsburg, Pa.

Stonick, E. A.,
R. D. 2,
Galeton, Potter Co., Pa.

Storer, N. W.,
Consulting Rwy. Engineer,
Westinghouse Elec. &
Manufacturing Co.,
East Pittsburgh, Pa.

Stoughton, S. J.,
General Manager,
Pittsburgh Cleanser
Laboratory,
1216 Metropolitan St.,
N. S., Pittsburgh, Pa.

Strachan, M. B.,
Y. M., Mon. Con. R. R. Co.,
2805 Strachan Ave.,
Dormont, Pgh., Pa.

Stracka, John S.,
Clerk,
Pressed Steel Car Co.,
313 Helen St.,
McKees Rocks, Pa.

Stritzinger, Frank
Wheel Insp'r., P.&L.E.R.R.,
117 Stem St.,
Wabash Station,
Pittsburgh, Pa.

Stucki, A.,
Engineer,
419 Oliver Bldg.,
Pittsburgh, Pa.

Stuebing, A. F.,
Vice President,
The Bradford Corp'n.,
370 Lexington Ave.,
New York, N. Y.

Suckfield, G. A.,
Asst. Chief Engr., F. C. D.,
Pressed Steel Car Co.,
McKees Rocks, Pa.

Sullivan, Ambrose W.,
Salesman,
Railway Steel-Spring Co.,
Webster Hall,
Pittsburgh, Pa.

Sullivan, M. J.,
Inspector of Stores,
P. & L. E. R. R.,
43 Highland Ave.,
McKees Rocks, Pa.

Sutherland, Lloyd,
Gen. Storekeeper,
P. & L. E. R. R.,
124 Greydon Ave.,
McKees Rocks, Pa.

- Snydam, R. S.,
President,
M. B. Snydam Co.,
Island & Preble Aves.,
N. S., Pittsburgh, Pa.
- Swanson, Carl A.,
C. C. to Gen. Mgr.,
P. & L. E. R. R.,
468 Irvin Ave.,
Rochester, Pa.
- Swenk, Raymond,
Supt., E. & A. Div.,
P. R. R. System,
New Castle, Pa.
- Sykes, Arthur H.,
Safety Agent,
P. & L. E. R. R.,
707 Florida Ave.,
Mt. Lebanon,
Pittsburgh, Pa.
- Sylvester, H. G.,
Mgr. Central Warehouse,
P. & L. E. R. R.,
Pittsburgh, Pa.
- Symons, F. E.,
President,
The Ralston Steel Car Co.,
Columbus, Ohio
- Taielet, John A.,
Gang Foreman,
Penna. R. R. System,
1102 Morrison Ave.,
N. S., Pittsburgh, Pa.
- Tarr, H. S.,
Foreman,
Union Railroad,
413 Franklin Ave.,
Wilkinsburg, Pa.
- Tate, James B.,
Purchasing Agent,
Pressed Steel Car Co.,
Farmers Bank Bldg.,
Pittsburgh, Pa.
- Tate, M. K.,
Manager of Service,
Lima Locomotive Works,
Inc.,
Lima, Ohio
- Tate, Ralph H.,
Vice President,
Fort Pitt Spring Co.,
P. O. Box 917,
Pittsburgh, Pa.
- Taylor, Clifton,
Sales Manager,
Molybdenum Corp. of
America,
Empire Bldg.,
Pittsburgh, Pa.
- Taylor, E. P.,
Conductor,
B. R. & P. Ry.,
235 Front St.,
Punxsutawney, Pa.
- Taylor, H. G.,
Pres., Ball Chemical Co.,
Fulton Building,
Pittsburgh, Pa.
- Taylor, Joseph M.,
Asst. to President,
Ball Chemical Co.,
1201 Fulton Bldg.,
Pittsburgh, Pa.
- Taylor, Leonard C. G.,
Gang Foreman,
Penna. Railroad,
1901 Marmaduke St.,
N. S., Pittsburgh, Pa.
- Taylor, W. H.,
Vice Pres., Nat. Lead & Oil
Co. of Penna.,
316 Fourth Ave.,
Pittsburgh, Pa.
- Teckemeyer, J. Fred,
Gang Foreman Freight,
P. & L. E. R. R.,
3042 Glenmawr Ave.,
Pittsburgh, Pa.
- Temple, H. H.,
C. Engr., P. & W. Va., Ry.,
441 Wabash Bldg.,
Pittsburgh, Pa.
- Terrill, Elmer, F.,
Chief Clerk,
Gen. Contracting Corp. of
Pittsburgh,
Front & Harriett Sts.,
Cincinnati, Ohio
- Thiele, Fred, Sr.,
Asst. Gen. Yard Master,
P. & L. E. R. R.,
McKees Rocks, Pa.
- Thomas, F. A.,
Dist. Representative,
Hanck Mfg. Co.,
246 Lehigh Ave.,
Pittsburgh, Pa.

Thomas, Frank B.,
Chief General Engineer,
W. A. B. Co.,
536 Trenton Ave.,
Wilkinsburg, Pa.

Thomas, R. A.,
Agent,
R'y. Express Agency,
B. & O. Terminal,
Pittsburgh, Pa.

Thomas, T. T.,
Foreman,
Union Railroad Co.,
422 Albert St.,
Turtle Creek, Pa.

Thompson, F. J.,
Terminal Supt.,
B. R. & P. Ry.,
221 E. Lincoln Ave.,
New Castle, Pa.

Thompson, Glenn A.,
Vice President,
Brown & Zortman
Machinery Co.,
327 Second Ave.,
Pittsburgh, Pa.

Thompson, Homer D.,
Air Brake Inspector,
Union Railroad,
Box 105,
Unity, Pa.

Thornton, Sir Henry W.,
Chairman & President,
Canadian National Rwy.,
360 McGill St.,
Montreal, Quebec, Canada

Tipton, George M.,
Agent, B. & O. R. R.,
Braddock, Pa.

Tomasic, Joseph D.,
Machinist,
Pennsylvania Railroad,
505 Greensburg Pike,
Turtle Creek, Pa.

Tomasic, Nicholas M., Jr.,
Locomotive Mechanic,
Pennsylvania Railroad,
122 Seventh St.,
Turtle Creek, Pa.

Torney, M. F.,
Yard Master,
Aliquippa & Southern R. R.,
163 Spring St.,
Aliquippa, Pa.

Touceda, Prof. Enrique,
Consulting Engineer,
943
Albany, N. Y.

Toussaint, R.,
Chief of Police,
P. & L. E. R. R.,
Pittsburgh, Pa.

Tovey, G. F.,
Asst. Train Master,
Aliquippa & Southern R. R.,
1213 Boundry St.,
Aliquippa, Pa.

Trainer, M. N.,
Asst. Vice President,
American Brake Shoe & Fdy.
Company,
230 Park Ave.,
New York, N. Y.

Trautman, Harry J.
Foreman,
Briggs & Turivas,
R. D. No. 2,
Coraopolis, Pa.

Triem, W. R.,
Supt. Freight Transp'n.,
Pennsylvania Railroad,
Pennsylvania Station,
Pittsburgh, Pa.

Trowbridge, F. A.,
Supt., Power House,
P. & L. E. R. R.,
821 Fifth Ave.,
California, Pa.

Trust, C. W.,
Asst. Traffic Mgr.,
Carnegie Steel Co.,
Carnegie Bldg.,
Pittsburgh, Pa.

Tucker, Jas. W.,
Division Storkeeper,
B. & O. R. R.,
Box 595,
Connellsville, Pa.

- Tucker, John J.,
R. R. Dept.,
Jos. Dixon Crucible Co.,
612 Ledger Bldg.,
Philadelphia, Pa.
- Tucker, Jno. L.,
Retired T. M.,
P. R. R. System,
5512 Centre Ave.,
Pittsburgh, Pa.
- Turner, F. M.,
General Superintendent,
A. & S. S. R. R. Co.,
Cor. 10th and Muriel Sts.,
S. S., Pittsburgh, Pa.
- Turner, J. J.,
Retired,
1917 Union Bank Bldg.,
Pittsburgh, Pa.
- Tuttle, C. L.,
Mech. Engr., B. & L. E. R. R.,
15 Shady Ave.,
Greenville, Pa.
- Tyrie, Robert M.,
R. F. of E.,
Montour Railroad,
Maple St.,
Coraopolis, Pa.
- Ufer, C. E.,
Pres., Penna. & Ohio
Lumber Co.,
2203 Oliver Bldg.,
Pittsburgh, Pa.
- Uline, Claude S.,
Tool, Die, Machine Work,
549 Orchard Ave.,
Bellevue, Pa.
- Unger, Dr. J. S.,
Manager, Central Research,
Bureau, Carnegie Steel Co.,
1054 Frick Bldg.,
Pittsburgh, Pa.
- Van Blarcom, Warren C.,
Supt., Aliquippa &
Southern R. R.,
Aliquippa, Pa.
- Vandivort, Robert E.,
Asst. Inspecting Engineer,
P. & L. E. R. R.,
714 East End Ave.,
Pittsburgh, Pa.
- Van Horn, I. L.,
Sales Rep.,
Ferbert-Schorndorfer Co.,
127 Central Square,
Mt. Lebanon, Pa.
- Van Ryn, William,
Asst. Foreman, Dept. D. M.,
Westinghouse Air Brake
Company,
Wilmerding, Pa.
- Van Vranken, S. E.,
Secretary-Treasurer,
Pgh. Cleanser Laboratory,
261 N. Balph Ave.,
Bellevue, Pa.
- Van Wormer, George M.,
Foreman, Erection Dept.,
Pressed Steel Car Co.,
129 Clairhaven St.,
Crafton Heights,
Pittsburgh, Pa.
- Vates, C. A.,
Fore. of W. S.,
P. & L. E. R. R.,
808 Lillian St.,
Pittsburgh, Pa.
- Venning, J. C.,
Special Agent,
Penna. Railroad,
610 Penna. Station,
Pittsburgh, Pa.
- Verret, Roy H.,
Mechanical Engineer,
Hazlett & Co.,
1537 Grandview Ave.,
Mt. Washington Sta.,
Pittsburgh, Pa.
- Vollmer, Karl L.,
Asst. Steam Engineer,
Spang-Chalfant Co.,
106 W. Undercliff St.,
Etna, Pa.
- Wahlert, H. A.,
Rep., Westinghouse
Air Brake Co.,
1932 No. Broadway,
St. Louis, Mo.
- Waldron, F. G.,
Die, Jig & Fixture Man,
Pressed Steel Car Co.,
62 Highland Ave.,
McKees Rocks, Pa.

- Walker, Mrs. A. Fenton,
United States & British
Representative,
Canadian Railways &
Marine World,
Toronto, Can.,
140 Liberty St.,
New York, N. Y.
- Walker, E. H.,
Vice President,
Bradford Corporation,
370 Lexington Ave.,
New York, N. Y.
- Wallace, W. E.,
Asst. Supervisor,
P. & L. E. R. R.,
442 Motheral Ave.,
Monessen, Pa.
- Walther, G. C.,
Foreman,
Penna. Railroad,
877 Second St.,
Verona, Pa.
- Warfel, J. A.,
Dist. Manager,
Air Reduction Sales Co.,
1116 Ridge Ave.,
No. S., Pittsburgh, Pa.
- Warner, E. O.,
Sales Agent,
National Malleable &
Steel Castings Co.,
Insurance Co. of N
America Bldg.,
Philadelphia, Pa.
- Warner, Russell H.,
Asst. Trainmaster,
Aliquippa & Southern
R. R., 2525 West
Liberty Ave., Dormont,
Pittsburgh, Pa.
- Warren, A. T.,
P. O. Box 120,
Michigan City, Indiana.
- Warrensford, Fred S.,
Chief Clerk,
P. & L. E. R. R.,
2839 Fifth Ave.,
Beaver Falls, Pa.
- Waterman, Edwin H.,
Car Foreman, Union R. R.,
Monongahela Jct. Shop,
East Pittsburgh, Pa.
- Watkins, T. A.,
Insurance Inspector,
Pgh. Coal Co.—Montour
Railroad,
3835 Hiawatha St.,
N. S., Pittsburgh, Pa.
- Watson, Claude,
Passenger Conductor,
B. R. & P. Ry. Co.,
Springville, N. Y.
- Watson, John,
Foreman,
Hanlon Gregory Galvanizing
Company,
5515 Butler St.,
Pittsburgh, Pa.
- Watt, Herbert J.,
Mgr. of Sales, Ry. Materials,
Jones & Laughlin Steel
Corporation,
Third and Ross Sts.,
Pittsburgh, Pa.
- Weaver, W. Frank,
Storekeeper,
The Pullman Co.,
7506 Formosa Way,
Pittsburgh, Pa.
- Weber, Roy H.,
Sales Engineer,
W. H. Miner, Inc.,
Rookery Bldg.,
Chicago, Ill.
- Webster, H. D.,
392 S. Main St.,
Greenville, Pa.
- Weckerle, W. J.,
General Yardmaster,
P. & L. E. R. R.,
Dickerson Run, Pa.
- Weiler, Paul,
District Sales Manager,
Franklin Railway Supply
Co., Inc.,
68 W. Fourth St.,
Dunkirk, N. Y.
- Weisbrod, J. F.,
Asst. Vice President,
Southern Wheel Co.,
122 Meyran Ave.,
Pittsburgh, Pa.

- Welch, E. M.,
Service Engineer,
Dearborn Chemical Co.,
2615 Mackinaw Ave.,
Pittsburgh, Pa.
- Wendt, Edwin F.,
Consulting Engr.,
Union Trust Bldg.,
Washington, D. C.
- West, George S.,
Master Mechanic,
Penna. Railroad,
521 Kendall Road,
Drexel Hill, Pa.
- West, W. C.,
Railroad Division,
Standard Oil Co. of Pa.,
Peoples Gas Bldg.,
Pittsburgh, Pa.
- Weston, A. P.,
Manager, Operating Dept.,
Pitts. Testing Laboratory,
P. O. Box 1115,
Pittsburgh, Pa.
- Wetzel, James S.,
Draftsman,
Wine Safety Appliance Co.,
5646 Rippey St.,
Pittsburgh, Pa.
- Whalen, Daniel J.,
Asst. Supt., Tank Dept.,
Pressed Steel Car Co.,
1144 Wayne Ave.,
McKees Rocks, Pa.
- Wheatley, Wm.,
Inspector,
Ft. Pitt Malleable Iron Co.,
1140 Dohrman St.,
McKees Rocks, Pa.
- Wheeler, Charles M.,
Sales Engineer,
Union Switch & Signal Co.,
Swissvale, Pa.
- Whipple, A. L.,
District Sales Manager,
Standard Stoker Co., Inc.,
350 Madison Ave.,
New York City
- Whitaker, U. A.,
Special Engineer,
Westinghouse Air Brake Co.,
1011 Fulton Road,
Canton, Ohio
- White, A. B.,
Supt., B. R. & P. Ry.,
Punxsutawney, Pa.
- White, C. G.,
Supervisor,
Aliquippa & Sou. R. R.,
193 Clay St.,
Rochester, Pa.
- White, C. M.,
Asst. General Supt.,
Jones & Laughlin Corp.,
Aliquippa Works,
Aliquippa, Pa.
- Whiter, E. T.,
Regional Vice Pres.,
Penna. R. R.,
Penna. Station,
Pittsburgh, Pa.
- Whitlock, C. E.,
General Superintendent,
Penna. Railroad,
Wilmington, Del.
- Whitmore, John G.,
General Counsel,
B. R. & P. Ry.,
Ridgway, Pa.
- Whitridge, J. C.,
President & General Mgr.,
The Buckeye Steel Castings
Company,
Columbus, Ohio
- Wholey, V. A.,
Gen. Traffic Mgr.,
P. & W. Va. Ry.,
Wabash Bldg.,
Pittsburgh, Pa.
- Wible, T. E.,
District Salesman,
Pittsburgh Brass Mfg. Co.,
37th St. & Penn Ave.,
Pittsburgh, Pa.
- Wikander, Oscar R.,
Mechanical Engineer,
Ring Spring Dept.,
Edgewater Steel Co.,
900 South Negley Ave.,
Pittsburgh, Pa.
- Wilcox, H. C.,
Editorial Representative,
Railway Age,
643 Terminal Tower Bldg.,
Cleveland, Ohio

- Wildin, G. W.,
District Manager,
Cardwell Westinghouse
Company,
Westinghouse Building,
Pittsburgh, Pa.
- Wilkinson, F. C.,
Asst. Trainmaster,
Penna Railroad,
519 Valley View Road,
Merion,
Montgomery Co., Pa.
- Williams, A. G.,
Car Foreman,
P. & W. Va. Ry.,
433 Broadway,
Carnegie, Pa.
- Williams, E. V.,
Yard Master,
Aliquippa & Southern R. R.,
1902 McMinn St.,
Aliquippa, Pa.
- Williams, Ernest V.,
S. M. P., B. R. & P. Ry.,
17 Rumbarger Ave.,
DuBois, Pa.
- Williams, R. R.,
Asst. Gen. Freight Agent,
B. R. & P. Ry.,
427 Wabash Bldg.,
Pittsburgh, Pa.
- Williamson, A. G.,
Signal Engr., Pittsburgh
Train Control Co.,
721 Washington Ave.,
Carnegie, Pa.
- Wilson, W. J.,
Engr., Retired,
P. & L. E. R. R.,
920 Second St.,
McKees Rocks, Pa.
- Wilson, W. R.,
General Yard Master,
B. R. & P. Ry.,
329 E. Brady St.,
Butler, Pa.
- Winslow Sidney H.,
Service Engineer,
Franklin Rwy. Supply Co.,
1105 Biltmore Ave.,
S. H. B., Pittsburgh, Pa.
- Witherspoon, B. H.,
President,
Pittsburgh Testing
Laboratory,
Locust & Stevenson Sts.,
Pittsburgh, Pa.
- Withrow, R. C.,
Division Sales Manager,
Freedom Oil Works Co.,
Mercer Road,
New Brighton, Pa.
- Wittman, Edward A.,
Loco. Boiler inspector,
Montour Railroad,
624 Mansfield Ave.,
West End, Pittsburgh, Pa.
- Wolf, H. M.,
Road Foreman of Engines,
P. & L. E. R. R.,
188 Kenmore Ave.,
Youngstown, Ohio
- Wolferberger, S. C.,
Asst. Supt.,
B. & O. R. R. Co.,
231 E. Patroit St.,
Somerset, Pa.
- Wood, E. H.,
Salesman,
Grip Nut Co.,
6141 University Ave.,
Chicago, Ill.
- Wood, John H.,
Telegraph Operator,
P. & L. E. R. R.,
1404 Monterey St.,
N. S., Pittsburgh, Pa.
- Woods, Joseph,
Statistician,
P. & L. E. R. R.,
5124 Baum Blvd.,
Pittsburgh, Pa.
- Woodward, Robert,
Machinist, P. R. R. System,
314 George St.,
Turtle Creek, Pa.
- Wray, Edward
Publisher,
Rwy. Purchases & Stores,
9 South Clinton St.,
Chicago, Ill.

- Wright, C. W.,
Sec'y., Steel Car Forge Co.,
410 Frick Bldg.,
Pittsburgh, Pa.
- Wright, E. W.,
Asst. to President,
Fort Pitt Malleable Iron Co.,
5442 Baywood Ave.,
Pittsburgh, Pa.
- Wright, John B.,
Asst. to Vice Pres.,
W. A. B. Co.,
Wilmerding, Pa.
- Wright, O. L.,
District Manager,
The Duff-Norton Mfg. Co.,
421 Chestnut St.,
Philadelphia, Pa.
- Wright, R. V.,
Managing Editor,
Railway Age
30 Church St.,
New York, N. Y.
- Wurts, T. C.
Heavy Traction Section Head,
Westinghouse Elec. &
Mfg. Co.,
East Pittsburgh, Pa.
- Wyke, J. W.,
Traveling Engr., Union R. R.,
East Pittsburgh, Pa.
- Wynne, F. E.,
Mgr., Ry. Equip. Eng. Dept.,
Westinghouse Elec.
& Mfg. Co.,
East Pittsburgh, Pa.
- Yarnall, Jesse,
Asst. Yard Master,
Pennsylvania Railroad,
123 Race Street,
Edgewood, Pa.
- Yelland, John L.,
Train Dispatcher,
A. & S. R. R. Co.,
609 Owens St.,
Aliquippa, Pa.
- Yohe, C. M.,
Vice President,
P. & L. E. R. R.,
Pittsburgh, Pa.
- Yohe, J. B.,
Retired—Vice President,
P. & L. E. R. R. Co.,
106 P. & L. E. Term.,
Pittsburgh, Pa.
- Young, F. C.,
Rep. Westinghouse Air
Brake Co.,
207 Westinghouse Bldg.,
Pittsburgh, Pa.
- Zammikiel, John,
Clerk,
Union Railroad Co.,
413 Boyd St.,
Turtle Creek, Pa.
- Zilian, Ralph F.,
Engine House Foreman,
Penna. Railroad,
1336 Pennsylvania Ave.,
N. S., Pittsburgh, Pa.
- Zimmerlink, Martin,
Yardmaster,
P. & L. E. R. R.,
409 Erie Street,
McKeesport, Pa.
- Zirckel, Arthur H.,
Asst. Traffic Manager,
Pittsburgh Steel Co.,
700 Union Trust Bldg.,
Pittsburgh, Pa.
- Zitzman, N. E.,
Chief Clerk,
P. & L. E. R. R.,
616 P. & L. E. Annex Bldg.,
Pittsburgh, Pa.
- Zoeller, Charles P.,
Engineer,
P. H. B. & N. C. Co.,
Evans City, Pa.
- Zollars, W. L.,
Freight & Ticket Agent,
P. & L. E. R. R.,
326 S. Eighth St.,
Connellsville, Pa.

In Memoriam

JAMES K. CULLEN

DIED JULY 31, 1930

HARRY D. HAMMOND

DIED MARCH 1, 1930

C. A. KARNS

DIED OCTOBER 11, 1930

MALCOM F. LEWIS

DIED AUGUST 29, 1930

STATEMENT OF THE OWNERSHIP, MANAGEMENT,
CIRCULATION, ETC., REQUIRED BY THE ACT
OF CONGRESS OF AUGUST 24, 1912.

Of Official Proceedings—Railway Club of Pittsburgh, published Monthly, except June, July and August, at Pittsburgh, Pa., for October 1, 1930.

STATE OF PENNSYLVANIA }
COUNTY OF ALLEGHENY } ss:

Before me, a Notary Public in and for the State and county aforesaid, personally appeared J. D. Conway, Secretary, who having been duly sworn according to law, deposes and says that he is the Editor and Publisher, of the Official Proceedings—Railway Club of Pittsburgh.

Publisher Official Proceedings—Railway Club of Pittsburgh.

Editor, J. D. Conway, 515 Grandview Avenue, Pittsburgh, Pa., (19th Ward.)

Managing Editor, J. D. Conway, 515 Grandview Avenue, Pittsburgh, Pa., (19th Ward.)

Business Manager, J. D. Conway, 515 Grandview Avenue, Pittsburgh, Pa., (19th Ward.)

The Official Proceedings—The Railway Club of Pittsburgh.

President, E. W. Smith, Pittsburgh, Pa.

Vice President, Prof. Louis E. Endsley, Pittsburgh, Pa.

Secretary, J. D. Conway, Pittsburgh, Pa.

Treasurer, E. J. Searles, Pittsburgh, Pa.

Known Bondholders—None.

J. D. CONWAY.

Sworn to and subscribed before me this 25th day of September, 1930.

(Seal) AGNUS B. SHAW, Notary Public.
(My commission expires next Session of Senate.)

R E S E R V E D

For the Modern Car

Modern methods of railroading demand that equipment be kept on the move. Time out for wheel changes is a matter of greater moment than ever before.

Nearly a million Davis "One-Wear" Steel Wheels have proved their ability to keep out of the shop and eliminate all need of contour conditioning or re-turning. A special composition steel, triple heat-treated, gives Davis "One-Wear" Steel Wheels greater mileage and longer life.

AMERICAN STEEL FOUNDRIES

New York

CHICAGO

St. Louis

YOUNGSTOWN

ALL STEEL CORRUGATED FREIGHT CAR DOORS

CAMEL

FREIGHT CAR DOOR FIXTURES

Weather and Burglar Proof

Top or Bottom Supported

CAMEL SALES COMPANY

332 South Michigan Avenue

CHICAGO, ILLINOIS

Pressed Steel Car Co.

MANUFACTURERS OF

FREIGHT and PASSENGER

-:- CARS -:-

CASTINGS

FORGINGS

BOLSTERS

BRAKEBEAMS

TRUCKS

UNDERFRAMES

GREY IRON WHEELS

COMPLETE FACILITIES FOR REPAIRING CARS

OFFICES

New York

Pittsburgh

Chicago

St. Paul

GENERAL REFRACTORIES COMPANY

Home Office
PHILADELPHIA, PA.

Manufacturers of High Grade Fire Brick
For All Railroad Purposes

Locomotive Arch Brick
Direct from Manufacturer to Consumer

Consignment Stocks, Prompt Deliveries
Quality and Service Assured

RAILWAY SALES DEPARTMENT

Graybar Building—420 Lexington Avenue
New York City



H. & K.
Double Rotating Chair
No. 900

CHAIR CAR COMFORT IN DAY COACHES

These Luxurious Chairs

—bring to a focus the steady improvement made in Hale & Kilburn car seats during the last half century. The tendency in this development has been constantly towards greater comfort, larger and more commodious seats, softer springs and greater beauty.

Hale & Kilburn Co.

General Offices and Works:
1800 Lehigh Ave., Philadelphia

NATHAN

MECHANICAL LUBRICATORS

WATER COLUMNS INJECTORS LUBRICATORS
LOW WATER ALARMS

Locomotive and Stationary Boiler Fittings

NATHAN MANUFACTURING CO., 250 Park Avenue, New York

VULCAN

CRUCIBLE STEEL COMPANY

Established in 1900

ALIQUIPPA, PA.

Makers of the better grades of Tool Steel, and the pioneers in the manufacture of high quality Vanadium Steels.

KING

METALLIC

for Locomotive Piston
Rods, Valve Stems and
Air Pumps.



PACKINGS

King Sander
Security Latch
King Indestructible Oil Cups
King Hand Boring Lathe
Gollmar Bell Ringer
Leach Sanders

Reg. U. S. Pat. Off.

THE U. S. METALLIC PACKING CO.
PHILADELPHIA, PA.

GRIP NUTS—Reapply—and Lock

Even on equipment that has been scrapped, after long service, the Grip Nuts are found firmly in place.

Reclaimed, oil-protected from rust, thousands of these veteran nuts are once more in the storerooms, awaiting perhaps their twentieth application.

And, on locomotives, on cars—on trucks, draft gear, bodies—anywhere they're put—they'll hold bolted parts tightly, reliably, in place, just as they did on their first application.

Only Grip Nuts can make such a claim; only Grip Nuts have such a record. The secret of positive, repeated, locking is built, invisibly, into Grip Nuts alone.

The service of twenty nuts in one Grip Nut! Think what that means in reduced maintenance costs!

GRIP NUT COMPANY

5917 S. WESTERN AVENUE

CHICAGO, ILLINOIS

The Only Manufacturers of the Only Grip Nuts

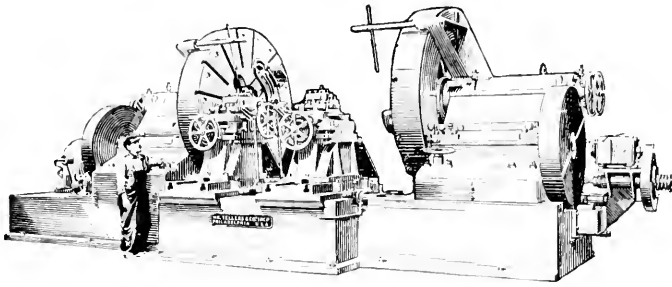
TUCO PRODUCTS CORPORATION

Tucolith Composition Flooring
Flexolith Composition Flooring
Royal Adjustable Car Window Screens
National Standard Steel Trap Doors
Universal Steel Trap Doors
Trap Door Locks and Holders
Tuc National Standard & Traction Roofing
Tuc Specially Treated Cab Curtain Material
Tucocendur Plates

Tuco Long Wear Floor Dressing
Resisto Hairfelt Insulation
Tuc Rockwul-Jacket Insulation
Tucork Insulation for Car Floors
Tuc Floor Plate Preservative
Eclipse Deck Sash Ratchets
Steel Car Sheathing, Panels and Slats
Reliance Sash Balances
Perfection Sash Balances
Brown Window Sash Weatherstrips

30 Church Street,
New York

Railway Exchange Building,
Chicago



Railroad Shop Tools

Driving Wheel Lathes Car Wheel Lathes
 Axle Lathes Driving Box Boring and Facing Mills
 Car Wheel Boring Mills Boring and Turning Mills
 Tool Grinders Drill Grinders

WM. SELLERS & CO., Incorporated

PHILADELPHIA, U. S. A.

SELLERS

*Class K, N-L Injector
 for Hot Water*

The most satisfactory form of non-lifting injector. Widest range of capacities; restarts automatically and is self-adjusting. Can use hotter water than any other type of non-lifting injector and materially lessens the formation of scale in the boiler.

Circular on application

WM. SELLERS & CO.
 Incorporated
 Injector Dept.

PHILADELPHIA, U. S. A.



CAR LIGHTING

COMPLETE EQUIPMENT

ELECTRIC OR GAS



The Safety Car Heating and Lighting Co.
 New York Chicago St. Louis Boston Philadelphia San Francisco Montreal

RAILWAY STEEL-SPRING CO.

Springs, Steel-Tired Wheels,
 Locomotive and Car Wheel Tires.
 Pressed Steel Journal Box Lids.

GENERAL OFFICE, 30 CHURCH STREET, NEW YORK
 BRANCH OFFICES—Chicago, St. Louis, St. Paul, Richmond, Denver,
 San Francisco, Dallas, Montreal, Que., Pittsburgh, Detroit, Cleveland

Donated by A Friend

for welding and cutting



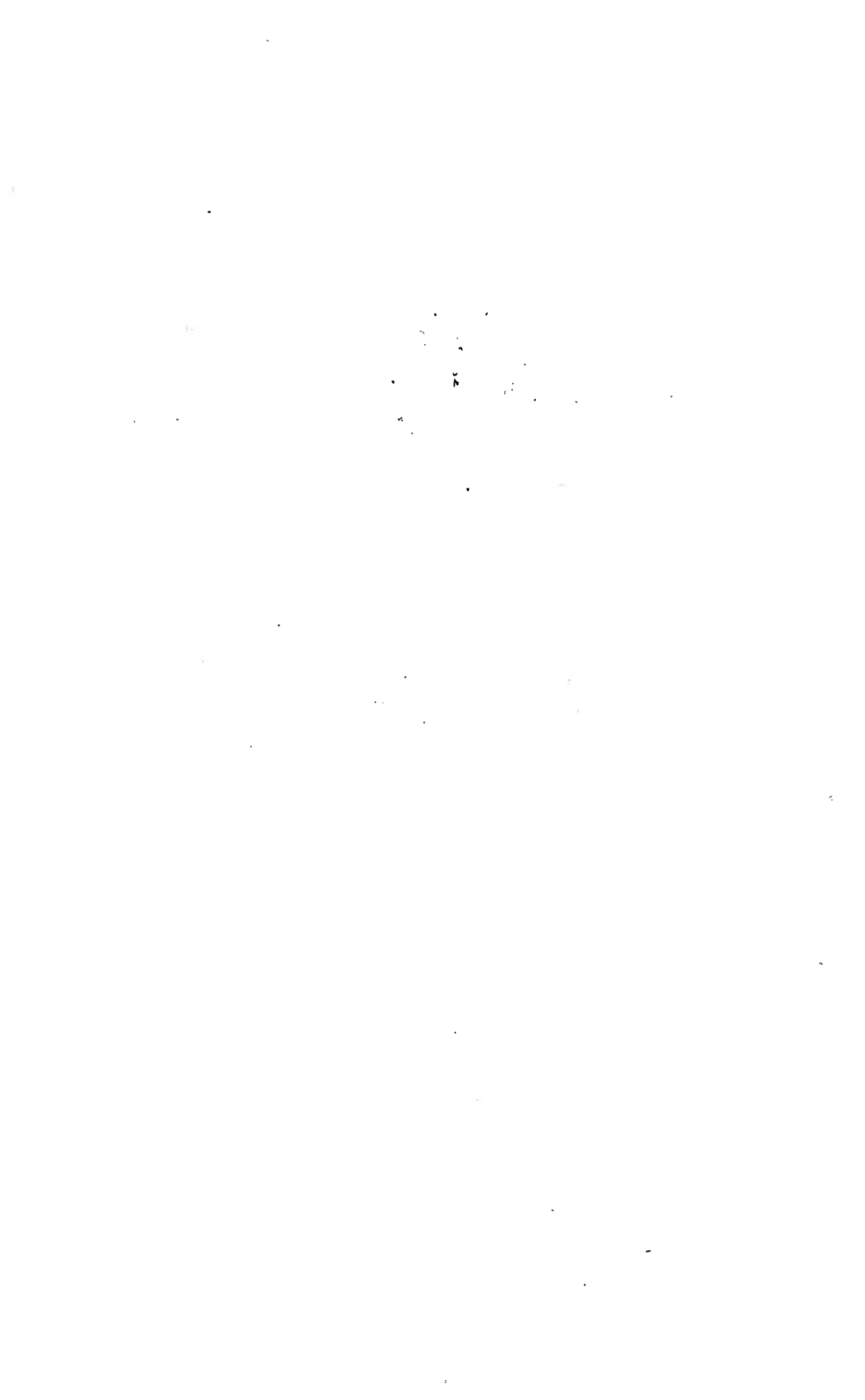
in the railroad shops of Pittsburgh
 district and thruout the country —
 Airco Oxygen—Airco Acetylene—Airco-
 Davis-Bournonville Welding and Cut-
 ting Apparatus—Supplies.

AIR REDUCTION SALES CO.

Pittsburgh
 1116 Ridge Avenue

New York
 Lincoln Building, 60 East 42nd Street





CARNEGIE LIBRARY OF PITTSBURGH



3 1812 04298 4212